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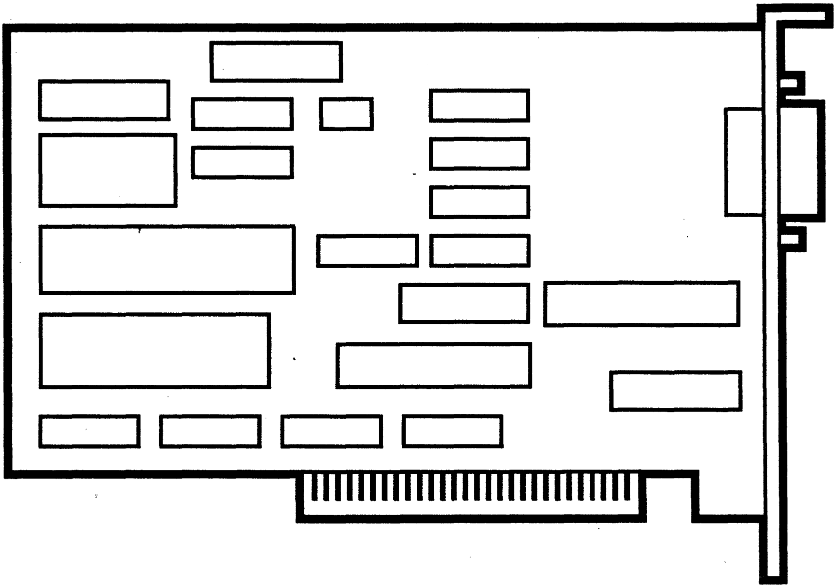
NOVEMBER 1995
PC455C-R2
PC364C

5250 Half Card Emulator
5250 EconoCard MC (Micro Channel)



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ELECTRICAL SAFETY STATEMENT

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.

2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.

3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.

4. Todas las instrucciones de operación y uso deben ser seguidas.

5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc..

6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.

7. El parato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.

8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.

9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.

10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.

11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.

13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.

14. El equio eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.

15. En caso de existir, una antena externa deberá ser localizada lejos de las lineas de energia.

16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.

17. Cuidado debe ser tomado de tal manera que objectos liquidos no sean derramados sobre la cubierta u orificios de ventilación.

18. Servicio por personal calificado deberá ser provisto cuando:

    A: El cable de poder o el contacto ha sido dañado; u

    B: Objectos han caído o líquido ha sido derramado dentro del aparato; o

    C: El aparato ha sido expuesto a la lluvia; o

    D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o

    E: El aparato ha sido tirado o su cubierta ha sido dañada.

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This equipment generates, uses, and can radiate radio frequency energy and if not installed an used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

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"Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada."

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1.0 Specifications

System Requirements —	PC455C-R2: IBM PC, PC/XT, AT, or compatible; IBM PS/2 model 25, 30, or 30386; or a 386 or 486 PC PC364C: IBM PS/2 model 50 or higher (Micro Channel® bus)
Systems Supported —	IBM Systems/34, /36, and /38; AS/400
Display Emulations —	IBM 5251-11, 5291, 5292-1, 3179-1, 3196, 3197C, 3197D, 3180
Printer Emulations —	IBM 5224/5225, 5256, 4210, 4214 (APP and BGU); 5219 and 3812 (non IPDS)
Number of Sessions —	Four for low memory requirements Seven for expanded features
Min. Configuration —	One display
Max. Configuration —	Seven sessions (#1 must be a display, otherwise any combination); DOS supports a maximum of 5 printers.
Memory —	Low Memory: 36K + 15K per printer + 16K upper memory block Standard: 61K + 15K per printer + 32 K upper memory block
Indicators —	(1) Line Sync LED on rear bracket
Connectors —	9-pin connector with auto-terminating twinax V-connector
Temperature —	Operating: 32°F to 110°F (0° to 44°C) Storage: -20° to 160°F (-29° to 71°C)
Size —	PC455C-R2: 4"W x 6"H (10.2 x 15.24 cm) PC364C: 3.25" x 12.25" (8.25 x 31.12 cm)
Weight —	2 lb. (0.9 kg)

2.0 Introduction

The 5250 Half Card Emulator lets you connect IBM® or compatible personal computers (PCs) to an IBM System/34, /36, /38, or AS/400®. There is also a model available for installation in Micro Channel® machines, the 5250 EconoCard MC (Micro Channel) (PC364C). Once you've installed the Card, your PC or Micro Channel computer and its printer can emulate host devices—but you still have access to PC applications such as a spreadsheet, word processor, and so on.

The 5250 Half Card Emulator is a half-size card that can be configured with software for either reduced memory requirements (a basic, low-feature option) or expanded functions such as record/playback, 132-column screen capability, and 5219 HP® or 3812 (non IPDS) printer emulation.

The operating software is included on one 3.5" disk. You can customize many of the Card's features during the software installation.

2.1 Unpacking

When you receive the Card, check the package for water or shipping damage, and contact the carrier if any damage is evident. The shipping package should contain the following:

- 5250 Half Card Emulator or 5250 EconoCard MC (Micro Channel)
- Keyboard templates
- One 3.5" software diskette
- Operator's Manual
- Auto-terminate V-connector

Keep the original packaging in case the card must be shipped.

2.2 PC Requirements

You must have the following to use the 5250 Half Card Emulator:

- IBM PC, PC/XT™, AT®, or compatible; IBM PS/2 model 25, 30, or 30386; or a 386 or 486 personal computer
- Floppy drive
- DOS version 3.0 or higher
- 512K RAM memory
- 16K (low memory option) or 32K (standard option) free upper memory block

You must have the following to use the 5250 EconoCard MC (Micro Channel):

- IBM PS/2® model 50 or higher (Micro Channel bus)
- Floppy drive
- DOS version 3.3 or higher
- 512K RAM memory
- 16K (low memory option) or 32K (standard option) free upper memory block

It's best to run the operating software from the hard drive if you have one installed in your PC or Micro Channel computer.

3.0 Installation

Before you install the 5250 Half Card Emulator, have the following information ready:

- The serial number of your 5250 Half Card Emulator (found under the connector on the card)
- Software revision number (from the diskette)
- Date of purchase
- PC brand
- PC type (XT/AT, 286, 386, 486, PS/2, etc.)—make sure it meets the requirements in Chapter 2
- Monitor type (EGA, VGA, etc.)
- Keyboard type (83, 84, or 102 keys)
- Printer brand (if attached)
- Printer model number
- Printer type (dot-matrix, laser, etc.)
- Host system (S/34, S/36, S/38, AS/400)
- Host system model
- System name (found in the upper right corner of a sign-on screen; this information is needed for PC Support installation)
- Host cable address(es) and emulation (contact your system operator for assistance):

- Cable Address (Valid addresses are 0 through 6.)
- Device Type (either display or printer.)
- IBM Device Emulated

You will need the following tools for installation:

- Screwdriver (flat blade or Phillips, depending on the model of PC)
- Pliers
- ¼- or ⁵⁄₁₆-inch socket wrench may be needed to remove the back cover and expansion slot brackets on some models of PCs.

3.1 Installing the 5250 Half Card Emulator (PC455C-R2)

Follow these instructions to install the 5250 Half Card Emulator in your PC.

1. Power off the PC, monitor, and other devices attached to the PC, and unplug all the power cords from the outlet.

2. Remove the monitor cable, printer cables, and any other cables attached to the back of the PC. You may want to mark where the cables are attached for reassembly. Lift the monitor off the PC and set it aside.

3. Follow the PC manual's instructions for removing the PC cover. Set the cover aside and save the screws for reassembly.

4. Locate an empty expansion slot in the PC. Using a screwdriver (or socket wrench, if necessary), remove the expansion slot cover as shown in Figure 3-1. Save the screw to hold the Card in place.

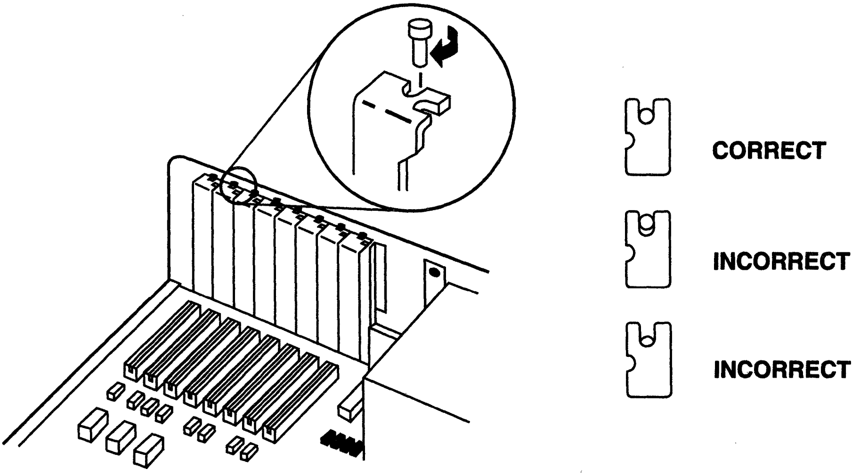


Figure 3-1. Installing the 5250 Half Card Emulator—Step Four.

5. Discharge static electricity from your body by touching a grounded surface, then remove the Card from the anti-static bag.

6. Hold the Card by its edges (don't touch the components or circuitry), and insert the Card into the expansion slot.

7. Press the Card into the socket connector on the PC's motherboard. See Figure 3-2.

WARNING

The 5250 Half Card Emulator is very static sensitive. Mishandling the Card or touching the components can damage the Card.

8. Align the slot in the Card bracket with the hole in the expansion slot. To align, gently lift or press down on the end opposite the bracket and connector until the bracket is properly aligned, as shown in Figure 3-1.

9. Insert and tighten the screw you removed from the expansion-slot cover.

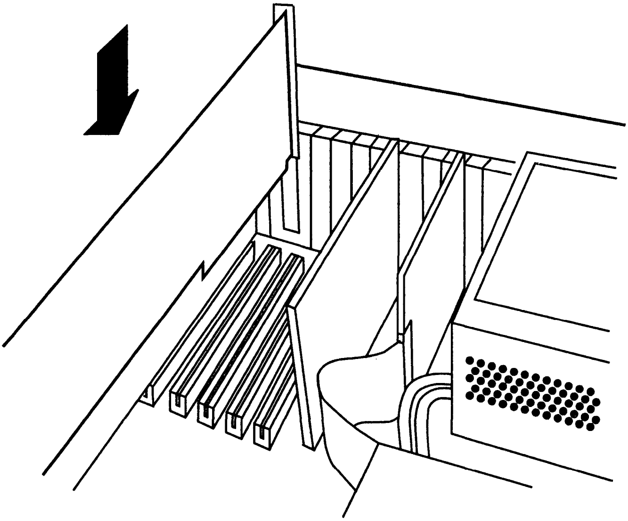


Figure 3-2. Installing the 5250 Half Card Emulator —Step Seven.

3.1.1 SELECTING THE MEMORY ADDRESS

Each card installed in your PC uses an area or address of PC upper memory. Two cards occupying the same memory address could cause operating difficulties. The 5250 Half Card Emulator's memory address is set using software (see Chapter 4).

When installing the Card, check the memory address of all other cards installed in your PC, then set the 5250 Half Card Emulator to an unused address during configuration.

The 5250 Half Card Emulator has no switches to set, but you will need to select an unused memory address for the Card. This information is requested by the configuration software when you are configuring the Card.

If you have a 386 or 486 computer, you may need to configure any "extended" or "expanded" memory management software (such as Windows™ or DOS EMM386) to exclude the memory area occupied by the 5250 Half Card Emulator. Instructions should be found in your Windows, DOS, or memory-manager software manual.

If your 386 or 486 computer uses memory cache, you should disable caching in the memory area occupied by the 5250 Half Card Emulator. This is typically done through the BIOS setup. Instructions should be found in your computer's manual.

If your 286, 386, or 486 computer uses a 16-bit bus VGA adapter, it may interfere with the 5250 Half Card Emulator unless you do one of the following:

- Have address E000 available to the 5250 Half Card Emulator.
- Configure your VGA adapter for 8-bit bus operation.

3.1.2 CONNECTING TO THE HOST

Take the following steps to connect the 5250 Half Card Emulator to your PC and to the host computer.

1. Locate the 9-pin connector on the 5250 Half Card Emulator at the back panel of the PC.
2. Attach the V-connector (it will only fit one way).
3. Tighten the two mounting screws to secure the connection.
4. Attach the host twinax cable (it connects to the host or controller) to either one of the twinax connectors. The V-connector automatically terminates when you attach one cable and cables through when you attach two cables.

3.2 Installing the 5250 EconoCard MC (Micro Channel) (PC364C)

Follow these instructions to install the 5250 EconoCard MC (Micro Channel) into your PS/2 (Micro Channel) PC.

1. Power off the PC, monitor, and other devices attached to the PC. Unplug all the power cords from the outlet.
2. Remove the monitor cable, printer cables, and any other cables attached to the rear of the PC. You may want to mark which one goes where for reassembly. Lift the monitor off the PC and set it aside.
3. Follow the PC manual's instructions for removing the PC cover. Set the cover aside and save the screws for reassembly.
4. Locate an empty, full-sized expansion slot in the PC. Loosen the thumbscrew at the back of the PC near the bottom of the chassis, and remove the expansion-slot cover as shown in Figure 3-3.

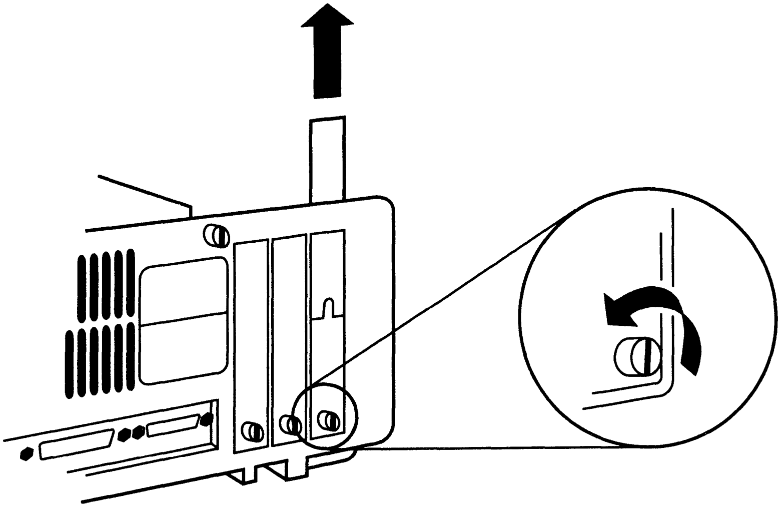


Figure 3-3. Installing the 5250 EconoCard MC (Micro Channel)—Step Four.

5. Discharge static electricity from your body by touching a grounded surface, then remove the Card from the anti-static bag.

6. Hold the Card by the bracket on each end (don't touch the components or circuitry, as you could damage them), and insert the Card into the expansion slot.

7. Press the Card into the socket connector on the PC's motherboard (see (Figure 3-4).

8. Fasten the Card into place by tightening the thumbscrew.

WARNING

The 5250 Half Card Emulator is very static sensitive. Mishandling the card or touching the components can damage the Card.

9. Replace and fasten the PC cover. Replace the monitor, and reattach the cables.

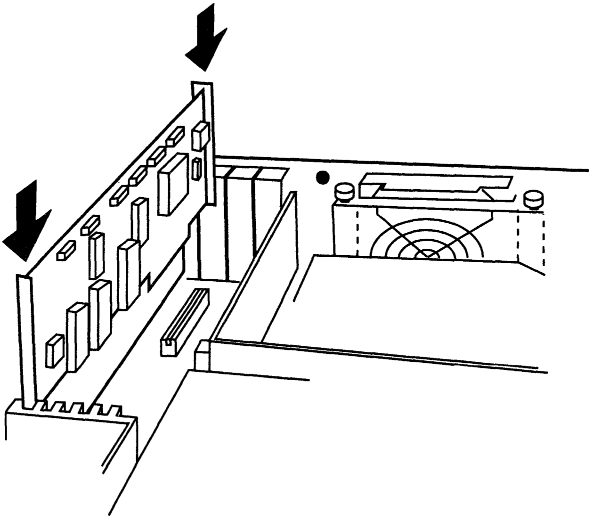


Figure 3-4. Installing the 5250 EconoCard MC (Micro Channel)—Step Seven.

3.2.1 SETTING THE MEMORY ADDRESS

Each card installed in your PC uses an area or "address" of the PC's upper memory. Two cards occupying the same memory address could cause operating difficulties. The 5250 EconoCard MC (Micro Channel)'s memory address is set using software.

Before you set the memory address, you should make a backup copy of the IBM Reference Disk. To make a backup copy, take the following steps:

1. Insert the original IBM Reference Disk in drive A and a blank, formatted diskette (refer to the PC's manual for information on formatting a diskette) in drive B.
2. Type **a:** and press **<Enter>**.
3. Type copy **a:*.* b:** and press **<Enter>**.
4. When finished copying, remove the original Reference Disk and put it in a secure place.
5. Remove the diskette from drive B and label it "Reference Disk Backup." You will use the backup diskette.

NOTE

For PCs with a single diskette drive, you must insert the source diskette, type the command, then remove the original and insert the target diskette when prompted.

Follow these steps to set the memory address:

1. Copy the address files from the software diskette onto the Reference Disk Backup by inserting the software diskette in drive A and the Reference Disk Backup in drive B. Type **copy a:*.adf b:** and press **<Enter>**. When finished, remove the diskettes from the drives.
2. Insert the Reference Disk Backup in drive A. Power on the PC. After a few moments, error code 165 appears.
3. Press **<F1>**. A logo screen appears. Press **<Enter>** to continue.
4. When prompted to "auto-configure" the PC, type **N** (no) and press **<Enter>**. A main menu screen appears.

5. Select "View Configuration" and press **<Enter>**.

   The configuration screen appears and shows the basic hardware and a description of all cards installed in the PC. Each card's assigned memory area is shown. An * marks cards with conflicting memory addresses.

6. Where conflicting addresses are shown, press the **<F5>** or **<F6>** key to change the memory address for one of the conflicting cards. F5 selects the next lower memory address, and F6 selects the next higher memory address. Choose an unused memory address, then press **<F10>** to save the change.

7. Press **<F3>** to exit to the main menu screen. Press **<F3>** again to exit the main menu.

8. Press **<Enter>** and the system reboots.

If you have a 386 or 486 computer, you may need to configure any extended or expanded memory management software (such as Windows or DOS EMM386) to exclude the memory area occupied by the 5250 EconoCard MC (Micro Channel). Instructions should be in your Windows, DOS, or memory-management software manual.

If your 386 or 486 computer uses memory cache, you should disable caching in the memory area occupied by the 5250 EconoCard MC (Micro Channel). Instructions should be found in your computer's manual.

3.2.2 CONNECTING TO THE HOST

Follow these steps to connect the 5250 EconoCard MC (Micro Channel) to your PC and to the host computer.

1. Locate the 9-pin connector on the card at the back panel of the PC.

2. Attach the V-connector (it fits only one way).

3. Tighten the two mounting screws to secure the connection.

4. Attach the host twinax cable (the cable that connects to the host or controller) to either one of the twinax connectors. The V-connector automatically terminates when you attach one cable and automatically cables through when you attach two cables.

4.0 Configuration

Before the Cards can communicate with the host system, you must configure both the host and the Cards.

The 5250 Half Card Emulators are configured using the operating software included in your package. The software contains various preset or "default" values. Change only the values relevant to your PC and printer.

The host is configured using the host's operating software. The system operator can help you configure the host.

4.1 Configuring the Host

Configure the host for the display and printer devices at the appropriate cable addresses. You can choose any of the device emulations available.

NOTE

Do not configure the host for a 102/103-key (enhanced) keyboard at the 5250 Half Card Emulator address even if you have a 102/103-key (enhanced) keyboard on your PC.

4.2 Installing the Configuration Software

Before you begin the software installation make a backup copy of the software for daily use. Refer to your PC's manual for instructions on making a backup copy of software. When you have finished making the copy, store the original diskette in a safe place in case the copy is damaged or lost.

Copy the software to the hard drive, following the steps below:

1. At the DOS prompt, create a directory from the root directory named 5250, and change to that directory. Type:

   C:<Enter>

   CD\<Enter>

   MD\5250<Enter>

   CD\5250<Enter>

2. Insert the backup diskette of the software into drive A.

3. Execute the install procedure by typing: **A:install<Enter>**. Follow the instructions on the screen.

4. When the copying is finished, remove the software diskette and store it in a safe place.

4.3 Using Microsoft Windows

After installing the software, follow these simple steps to install the 5250 Half Card Emulator into Windows:

1. Start Windows by typing **WIN.EXE**.
2. Go to the folder where the 5250 icon is to be located.
3. From the File menu, select New.
4. Select Program Item.
5. For the description, type in **5250**.
6. For the command line, type **TWATTACH.PIF**.
7. For working directory, type **C:\5250**.
8. Leave shortcut key blank.
9. Select Change Icon.
10. For the icon name, type **C:\5250\TWATTACH.ICO**.
11. To save and exit, click on OK twice.
12. From the File menu, select New.
13. Select Program Item.
14. For the description, type in **TWCONFIG**.
15. For the command line, type **TWCONFIG.PIF**.
16. For working directory, type **C:\5250**.
17. Leave shortcut key blank.
18. To save and exit, click on OK twice.
19. Double click on the TWCONFIG icon to start the configuration.
20. Configure the software using the instructions in this chapter. Change the Hot Key code under "Keyboard" to ensure the proper Windows Hot Key functions will work.
21. Double click on the 5250 icon to start emulation.

4.4 Configuring the 5250 Half Card Emulator

The Card's configuration is saved as a file. Each time you change the configuration, you modify this file. You can change the default (factory) configuration file, since this file is already present, or you can create a new one. You may want to create several configuration files. For example, you may have many users, each with specific needs, and each user may want to create and use a unique configuration file.

The following keys are used throughout the configuration.

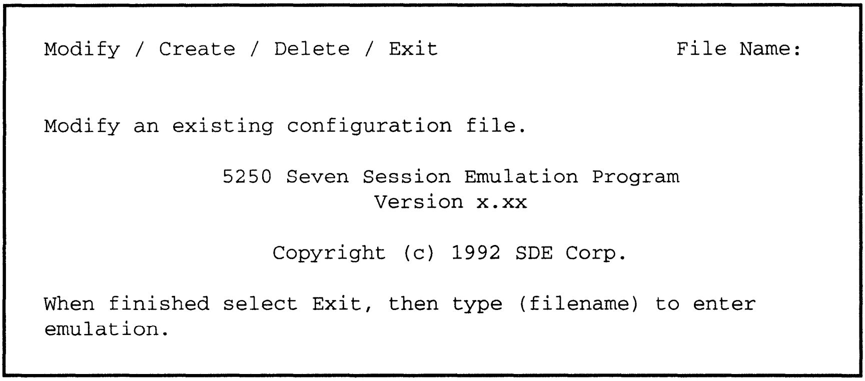
- **<Enter>** — Selects and saves your choice.
- **<Esc> (Escape)** — Returns to the previous screen.
- ←↓↑→ **(Cursor Arrows)** — Move from one option to another.
- **Space Bar** — Erases the choice shown at the cursor location. In some cases, it also toggles through the selections for that option.

Now you're ready to start the configuration process. Follow the steps below.

1. Power on the PC, and change to the drive and directory where the Card's software is stored (usually C:\5250).

2. Type **twconfig** at the DOS prompt and press **<Enter>**. After a few moments, the Main Menu appears as shown below.

3. Use the cursor arrow keys to move the highlighted block on the top of the Main Menu to your choice of Modify, Create, Delete, or Exit. Press **<Enter>** to select your choice. Procedures and functions for the four choices are described in the following section.



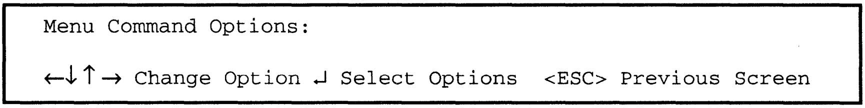
```
Modify / Create / Delete / Exit                   File Name:


Modify an existing configuration file.

              5250 Seven Session Emulation Program
                          Version x.xx

                  Copyright (c) 1992 SDE Corp.

When finished select Exit, then type (filename) to enter
emulation.
```



```
Menu Command Options:

←↓↑→ Change Option ↵ Select Options  <ESC> Previous Screen
```

4.4.1 MODIFY OR CREATE A CONFIGURATION

To change an existing configuration, select Modify. A list of up to eight (8) configuration files is displayed. The default configuration file is named **TWATTACH**. You may want to modify the default configuration file, rather than create a new one, to reduce the amount of disk storage on the diskette or hard drive.

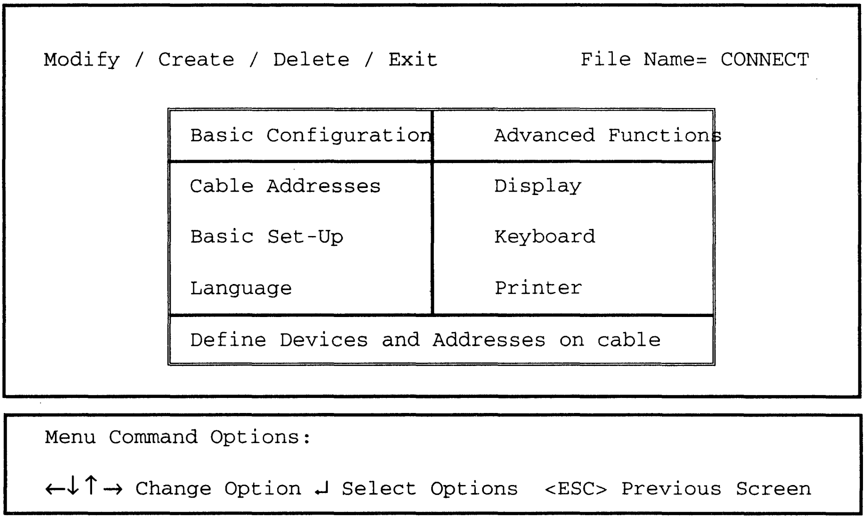
To create a new configuration file, select Create. This creates and stores a new file. Type the new file name, then press **<Enter>**.

NOTE

If you create a new file, you must type "TWATTACH" and the new file name to start emulation.

When you select Modify or Create, the Configuration Menu appears as shown below. This menu shows the categories available for modification.

- **Basic Configuration** — The items in the left column are necessary for the basic configuration of your PC.
- **Advanced Functions** — The items in the right column are for more advanced configuration of your PC with the host. Ask your system operator for assistance.



```
Modify / Create / Delete / Exit          File Name= CONNECT

        Basic Configuration     Advanced Functions

        Cable Addresses         Display

        Basic Set-Up            Keyboard

        Language                Printer

        Define Devices and Addresses on cable

Menu Command Options:

←↓↑→ Change Option ↵ Select Options  <ESC> Previous Screen
```

Move the cursor to an option on the Configuration Menu and press **<Enter>**. This displays a second screen of options under that choice. Make selections from the items on the Configuration Menu until you're finished.

When you're through making selections from the Configuration Menu, press **<Esc>** to return to the Main Menu. You are prompted to save the configuration. If you choose **Yes**, the configuration you've just created or modified is saved. If you choose **No**, the configuration is not saved.

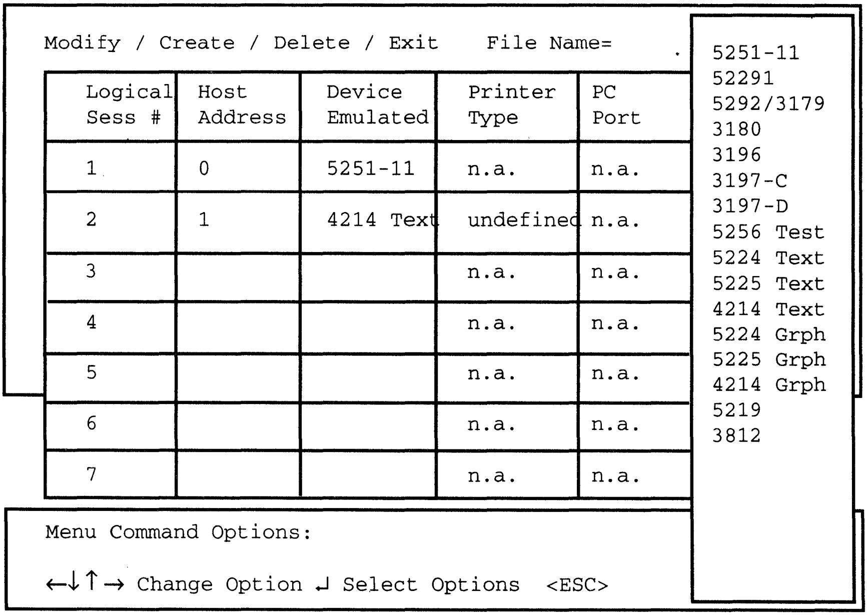
Basic Configuration:

The Basic Configuration options are used to set the following:

- Cable addresses
- Basic setup options for the PC
- Language type
  (to match the host)

Cable Addresses:

Move the cursor to Cable Addresses and press **<Enter>**. The following screen appears.



Modify / Create / Delete / Exit   File Name=

Logical Sess #	Host Address	Device Emulated	Printer Type	PC Port
1	0	5251-11	n.a.	n.a.
2	1	4214 Text	undefined	n.a.
3			n.a.	n.a.
4			n.a.	n.a.
5			n.a.	n.a.
6			n.a.	n.a.
7			n.a.	n.a.

5251-11
52291
5292/3179
3180
3196
3197-C
3197-D
5256 Test
5224 Text
5225 Text
4214 Text
5224 Grph
5225 Grph
4214 Grph
5219
3812

Menu Command Options:

←↓↑→ Change Option ↵ Select Options <ESC>

Each column heading from the previous screen is described below:

- **Logical Session #** — Each device is referred to as a Logical Unit (LU) or session. You can assign a maximum of 7 devices with the standard-memory option, or 4 devices with the low-memory option.
- **Host Address** — The host address is the twinax cable address used to identify communication to and from an LU. Select your assigned addresses on the screen. You can use an address only once. Use the space bar to erase an address selection.
- **Device Emulated** — The 5250 Half Card Emulator can emulate IBM displays or printers. Choose which IBM devices you want the Card to emulate. Move the cursor to the **Device Emulated** column, and a window appears on the screen with the display and printer choices. These are the choices: 5251 model 11, 5291, 5292, 3179, 3180, 3196, 3197D, 3197C displays and 5256 text, 5224 text, 5225 text, 4214 text, 5224 graphic, 5225 graphic, 4214 graphic, 5219, and 3812 printers.

Choose a graphic printer option if the attached printer can print graphic characters. See the printer's manual to determine if the printer can print graphic characters.

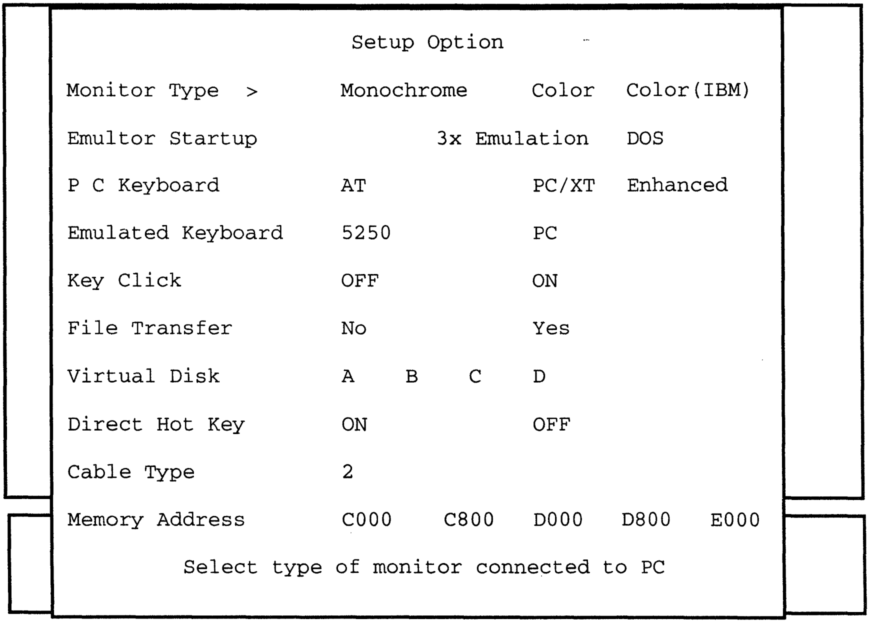
Use the cursor up and cursor down keys to highlight the emulation choice and press **<Enter>** to select. Make sure your emulation choice for each cable address matches the emulation configured on the host by the system operator.

- **Printer Type** — If you choose a printer emulation at one of the addresses for your attached printer, you must also identify the printer's brand and/or model. Move the cursor to the Printer Type column, and a window is displayed with various printer choices. Move the cursor down the list to make your selection. If you selected 5219 for the printer emulation, the HP LaserJet® is entered here and you can't change it. If you selected 3812, you have a choice of HP, HP 4029, or PPDS 4029 (you must select one). The Fargo and Zebra choices are for bar code printers (these two choices only appear if you select a text printer such as 5224 Text). If your printer is not listed, you can create your own printer definition by selecting Other, typing a new name, and then defining the printer (pg. 36).

- **PC Port** — Select the PC port to which your printer is physically attached. Choose an **LPT** port for parallel printers or a **COM** port for serial printers. Move the cursor to the PC Port column, and a window appears with the following choices: **LPT 1, LPT 2, LPT 3, COM 1,** or **COM 2**. If you select a **COM** port for serial printers, a second window appears on your screen to define communications protocol such as baud rate, stop bits, parity, and so on. Check your printer's manual to determine these values for your printer, then select those values from the window.

Basic Setup:

Basic Setup options configure your PC for the host. Move the cursor to Basic Setup and press **<Enter>**. The following screen appears.



```
                          Setup Option

Monitor Type   >      Monochrome      Color    Color(IBM)

Emultor Startup               3x Emulation     DOS

P C Keyboard          AT              PC/XT    Enhanced

Emulated Keyboard     5250            PC

Key Click             OFF             ON

File Transfer         No              Yes

Virtual Disk          A    B    C     D

Direct Hot Key        ON              OFF

Cable Type            2

Memory Address        C000    C800    D000    D800    E000

             Select type of monitor connected to PC
```

These are the options for Basic Setup:

- **Monitor Type** — Select the monitor type connected to your PC. Your options include **Monochrome, Color, or Color (IBM)**. To make a selection, move the highlighted block to the choice.

  If the screen is snowy, change to the **Color (IBM)** option.

- **Emulator Startup** — After you start emulation (communication with the host), you see either a DOS screen or a host screen. If you want to start emulation with a DOS screen, select DOS. Then you can "hot key" to the host session. If you want to start emulation with a host screen, select **3X Emulation**.

- **PC Keyboard** — Select the correct keyboard type. Your choices include **AT** (83 keys); **PC/XT** (83 keys, different layout); or **Enhanced** (102/103 keys). Move the cursor to make your selection.

- **Emulated Keyboard** — Select the keyboard type you want to emulate. Keyboards used with a **PC/XT** or **AT** have the same number of keys as the IBM 5250 keyboard for the host, but they have different key layouts and scan codes.

  If you are an experienced host system user, you may be more comfortable using the 5250 layout. This selection uses the same general layout as a keyboard used on the host. If you are more familiar with the PC layout, select PC. See the keyboard templates in Appendix A. The normal PC keyboard layout is restored when you hotkey from the host to DOS.

- **Key Click** — While in emulation with the host, the key click can be turned **ON** or **OFF**. Select your preference.

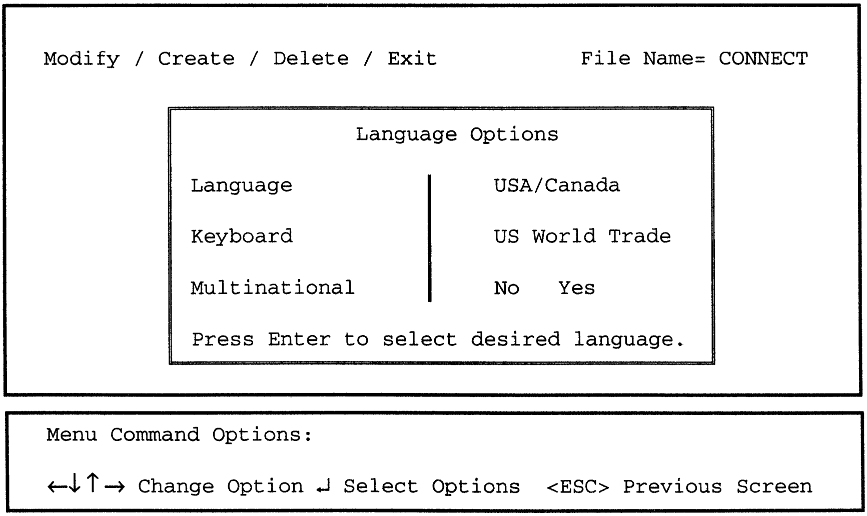
- **File Transfer** — Select **Yes** if you use PC Support/36, /38 or other file transfer utilities. If you answer **Yes,** LU1 must be configured as a display device. If LU1 is not configured, or if it is not configured as a display, the configuration program will not allow file transfer. The **No** choice disables file transfer.

- **Virtual Disk** — This option defines which disk drive is used during file transfer when your system uses IBM's File Transfer Facility (FTF), File Support Utility (FSU), or PC Support/38. Your choices are A, B, C, or D. If you have a hard drive or a system with 2 floppy drives, specify one of the floppy drives as your virtual disk. If you have a single floppy system, verify that the PC's motherboard is configured for 2 floppy drives, and specify B as your virtual disk. The specified disk cannot be used at the same time as the file transfer request.

- **Direct Hotkey** — The direct hotkey jumps from one session directly to another session rather than jumping sequentially through the sessions (see Section 5.2). You can enable the direct hotkey by choosing **On**, or disable it by choosing **Off**.
- **Cable Type** — Choose the type of cable attached to the host. If you use twinax cable, select 2. For balun and twisted-pair cabling, choose 3.
- **Memory Address** — Select the address where the 5250 Half Card Emulator's memory will reside.

Language

The language options are used to match the language configured on the host. When you select the **Language** option the following screen appears.



```
Modify / Create / Delete / Exit              File Name= CONNECT

                    Language Options

           Language            |      USA/Canada

           Keyboard            |      US World Trade

           Multinational       |      No    Yes

           Press Enter to select desired language.

Menu Command Options:

←↓↑→ Change Option ↵ Select Options  <ESC> Previous Screen
```

The options from the Language menu are described below:

- **Language** — Match the language configured on your host: USA/Canada, Austria/Germany, Belgium, Canadian French, Denmark, Finland/Sweden, France, Italy, Norway, Portugal, Spain, Spanish Speaking, Swiss German, Swiss French or United Kingdom.
- **Keyboard** — Select the type of keyboard: **US** for United States keyboards or **World Trade** for non-U.S. keyboards.
- **Multinational** — Select **No** or **Yes** (normally No). If your host is configured for Multinational, select Yes.

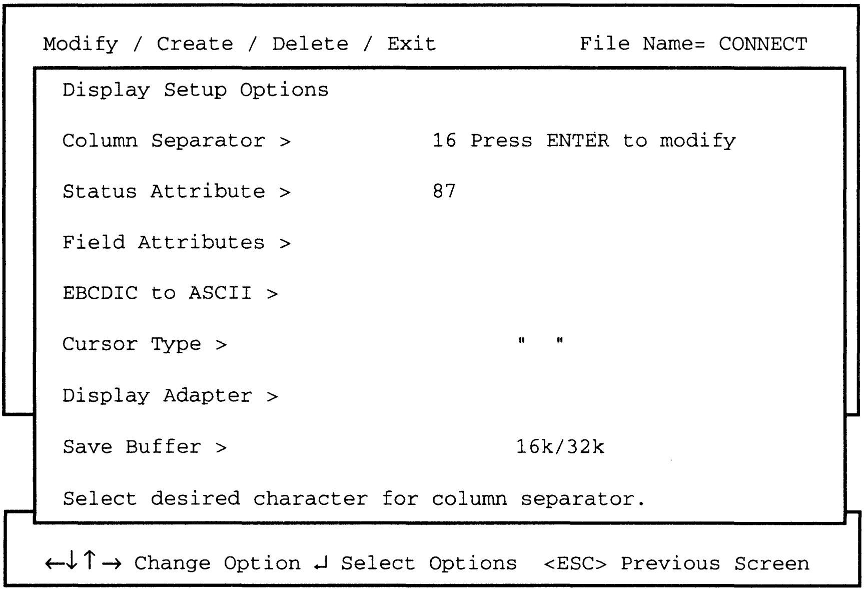
Advanced Functions

Change the advanced functions only if you have a unique application. You might want to consult your system operator before you make any selections. The Advanced Functions options include the following.

- Display
- Keyboard
- Printer

Display

The Display options are used to set up the attributes of your screen display, as shown below.



```
Modify / Create / Delete / Exit          File Name= CONNECT

  Display Setup Options

  Column Separator >          16 Press ENTER to modify

  Status Attribute >          87

  Field Attributes >

  EBCDIC to ASCII >

  Cursor Type >                     "  "

  Display Adapter >

  Save Buffer >                     16k/32k

  Select desired character for column separator.

←↓↑→ Change Option ↵ Select Options  <ESC> Previous Screen
```

These are the options for the Display menu:

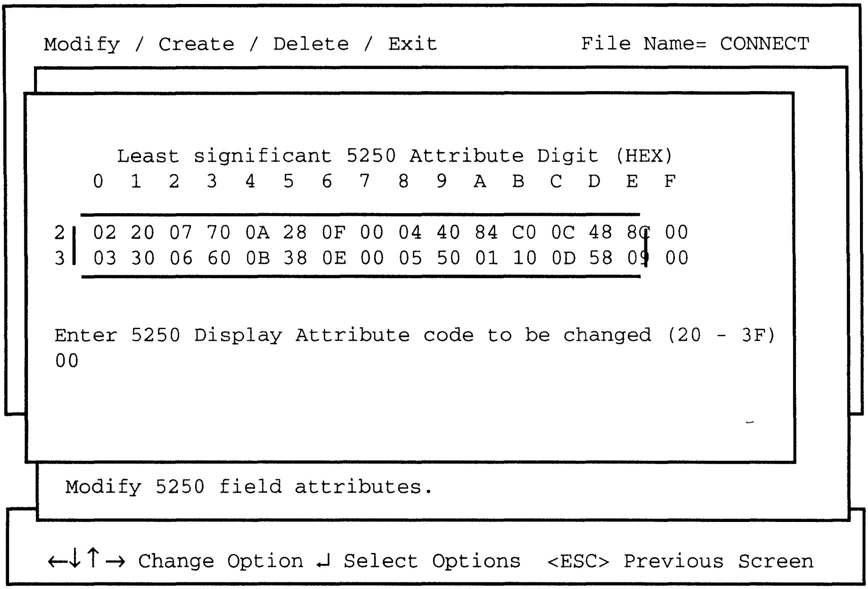
- **Column Separator** — Host screens use column separators, while PCs do not. This option lets you choose a column separator. Move the cursor to Column Separator and press **<Enter>**. A window containing an ASCII table appears. Move the cursor around the table to highlight the character you want to use as a column separator. Press the **<Enter>** key to select the new character. The default character is hexadecimal **B3**, which is a straight vertical line (|).

- **Status Attributes** — In this option, you choose how the status line for the host system is displayed on your PC screen. Find the hexadecimal value in Table 4-2 (for a monochrome monitor) or Table 4-3 (for a color monitor) for the status-line display you want and enter that value here.

  The value you enter is for the first display session. If you're using a color monitor, the software automatically assigns each following session the prior character attribute. For example, if you select a red character on a black background **(04)** for the first display session, the second session will have a cyan character **(03)**, the third session a green character **(02)**, and so on to help you know which session you're in. Use care in selecting colors; you do not want the background color the same as the character color, or you will not be able to see the characters.

- **Field Attributes** — Host systems use field attributes to identify different field types on the display screen. For example, a warning or message field on the screen might be flashing red, while the normal screen fields might be green. You can customize these field colors to suite your tastes or applications.

  When you move the cursor to the Field Attributes option, a window appears on the screen showing the current field attributes (see the following screen).



```
Modify / Create / Delete / Exit            File Name= CONNECT

      Least significant 5250 Attribute Digit (HEX)
    0  1  2  3  4  5  6  7  8  9  A  B  C  D  E  F

 2| 02 20 07 70 0A 28 0F 00 04 40 84 C0 0C 48 8C 00
 3| 03 30 06 60 0B 38 0E 00 05 50 01 10 0D 58 09 00

 Enter 5250 Display Attribute code to be changed (20 - 3F)
 00

  Modify 5250 field attributes.

←↓↑→ Change Option ↵ Select Options  <ESC> Previous Screen
```

To change the field attributes, do the following:

1. Find the IBM 5250 field you want to change by its description in Table 4-1. Type in the hexadecimal value for that field on your configuration screen. Press **<Enter>**. A beep will sound if you make a choice that is not allowed.

2. Find the attribute you wish to give this field in Table 4-2 or 4-3, depending on the type of monitor you have. Type in this value—the **first digit** for the **background** (screen) and the **second digit** for the **foreground** (character). Press **<Enter>**. Notice that the field changes to the attributes you just entered.

3. Continue to change attributes or follow the directions on the screen to exit.

Table 4-1. IBM 5250 Field Attributes.

Hex Value	Description		
	Monochrome	Normal Color	Seven-Color
20	Normal display	Green data (normal)	Green data
21	Reverse	Reverse (green bckgrnd),	Green reverse image
22	High intensity	White data	White data
23	Reverse, high intensity	White reverse image	White reverse image
24	Underscore	Green data, underscore	Green data, underscore
25	Underscore, reverse	Green reverse (white underscore)	Green reverse, underscore
26	Underscore, high intensity	White data, underscore	White data, underscore
27	No display (blank screen)	No display (blank screen),	No display (blank screen),
28	Blink	Blink, green data	Red data
29	Blink, reverse	Blink, green reverse image	Red reverse image
2A	Blink, high intensity	Blink, white data	Blink, red data
2B	Blink, high intensity, reverse	Blink, white reverse image	Blink, red reverse image
2C	Blink, underscore	Blink, green data, underscore	Red data, underscore
2D	Blink, underscore, reverse separators	Blink, green reverse, white underscore	Red reverse, underscore
2E	Blink, underscore, high intensity	Blink, white data, blue underscore	Blink, red data, underscore
2F	No display	No display	No display
30	Normal, column separators	Green data, blue column separators	Turquoise data, column separators

Table 4-1 (continued). IBM 5250 Field Attributes.

Hex Value	Description		
	Monochrome	Normal Color	Seven-Color
31	Reverse, column separators	Green reverse image, blue column separators	Turquoise rev. image, column separators
32	High intensity, column separators	White data, blue column separators	Yellow data, column separators
33	Rev., high intensity, column separators	White reverse image, blue column separators	Yellow reverse image, column separators
34	Underscore, column separators	Green underscore, column separators	Turquoise data, underscore, col.separators
35	Underscore, reverse, column separators	Green reverse image, underscore, col. sep.	Turquoise rev. image, underscore, col. sep.
36	Underscore, high intensity, col. sep.	White underscore, column separators	Yellow data, underscore, column separators
37	No display	No display	No display
38	Blink with column separators	Blink, green data, blue column separators	Pink data
39	Blink, reverse, column separators	Blink, green reverse image, blue col. sep.	Pink reverse image
3A	Blink, high intensity, column separators	Blink, white data, white column sep.	Blue data
3B	Blink, high intensity, reverse, col. sep.	Blink, white reverse, white col. separators	Blue reverse image
3C	Blink, underscore, column separators	Blink, green data, green underscore, col. separators	Pink data, underscore
3D	Blink, underscore, reverse, column separators	Blink, green reverse, white underscore, col. separators	Pink reverse image, underscore
3E	Blink, underscore, high intensity col. sep.	Blink white data, underscore, col. sep.	Blue data, underscore
3F	No display	No display	No display

Table 4-2. Monochrome Field Attributes.

Hex Value	Description
01	Normal underscore
07	Normal
09	High-intensity underscore
0F	High-intensity
70	Reverse image
81	Blink underscore
87	Normal blink
89	High-intensity blink underscore
8F	High-intensity blink
F0	Reverse image blink

Table 4-3. Color Field Attributes.

1st Digit	Background	2nd Digit	Foreground
0	Black	0	Black
1	Blue	1	Blue
2	Green	2	Green
3	Cyan	3	Cyan
4	Red	4	Red
5	Magenta	5	Magenta
6	Brown	6	Brown
7	White	7	White
8	Black Blinking	8	Grey
9	Blue Blinking	9	Light Blue
A	Green Blinking	A	Light Green
B	Cyan Blinking	B	Light Cyan
C	Red Blinking	C	Light Red
D	Magenta Blinking	D	Light Magenta
E	Brown Blinking	E	Yellow
F	White Blinking	F	High-Intensity White

Following is an example of the modification of a field attribute.

First, determine what field you wish to change. For this example, use the first field in Table 4-1, **Normal display**. The current hexadecimal value for that field is 20. Looking at the screen, the first digit of the field's hex value is vertically on the left, with the second digit of the hex value horizontally across the top. Find **2** down the left, and **0** across the top, and follow the row and column to find the current attributes assigned to that **Normal display** field.

Second, look at Table 4-3. The current value for **Normal display** is **02**, a black (**0**) background with a green (**2**) foreground or character. For this example, change the **02** attribute for the **Normal display** to a blue background with a white character (foreground). Again, looking at Table 4-3, the value for the blue background is **1**, and the value for the white foreground is **7**.

To change the attribute, type **20** for **Normal display** in the **Enter 5250 display attribute code to be changed (20 - 3F)** field and press **<Enter>**.

The configuration program then prompts for a new value foı the **Normal display** field attributes. Type **17** (blue background and white character) and press **<Enter>**. The value under **20** will now change to **17** and show the background and foreground colors you selected.

- **EBCDIC to ASCII** — This option is for advanced users only.

The character codes used by the host are different from those used by the PC. The host uses EBCDIC and the PC uses ASCII. To allow both systems to communicate, an EBCDIC to ASCII translation table is used in the Card's software.

This option lets you customize this table. For example, you could change the **$** character to display as a **#** character. Move the cursor to the EBCDIC to ASCII option and press **<Enter>**. To change the table, first select the EBCDIC code you wish to change. For example, enter the EBCDIC code for a **$** character, which is 5B (see Chapter 6 for an EBCDIC table). Second, enter the ASCII code you want displayed (see Appendix C for an ASCII table), in this case, the ASCII code for the **#** character, which is 23.

- **Cursor Type** — Choose the cursor type you want displayed. The choices are **0** (blinking block), **1** (blinking block), **2** (blinking overline), **3** (no cursor) or **4** (blinking underline).

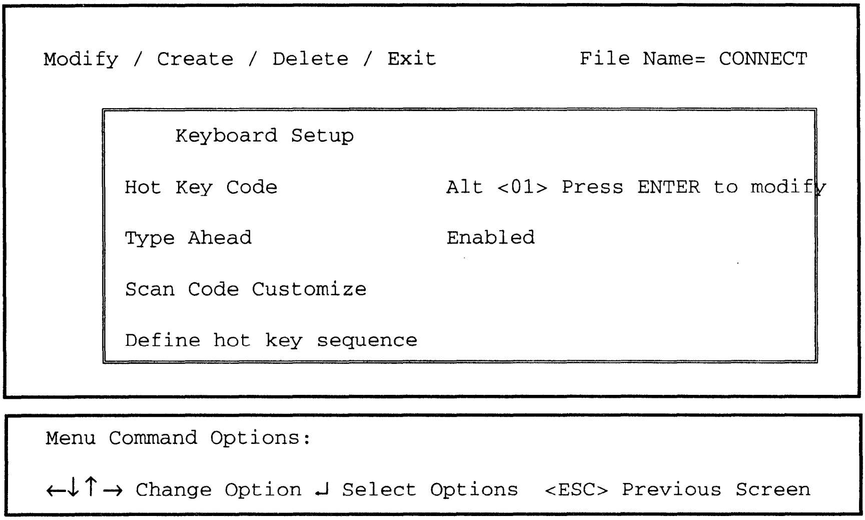
- **Display Adaptor** — Some monitors must change modes to display 132 columns. Other monitors may not support 132-column screens at all. If your monitor supports 132 columns, and you want to enable 132-column display, you must enter this code.

  After you press **<Enter>**, a second window appears. Find the **Set Video Command** codes in the video adaptor card manual (or contact the manufacturer for the 132-column code). Enter the hex code for a 132-column screen in the AL option and press **<Enter>**.

- **Save Buffer** — If you are using 132-column graphics screens, more memory is required to save these screens when hot keying between sessions. Select 32K for 132-column graphics screens or 16K for all other screens.

Keyboard

With this option, you can customize the keyboard, such as the hotkey sequence or the keyboard's scan codes. These options are shown in the screen below.



```
Modify / Create / Delete / Exit            File Name= CONNECT

          Keyboard Setup

      Hot Key Code               Alt <01> Press ENTER to modify

      Type Ahead                 Enabled

      Scan Code Customize

      Define hot key sequence

Menu Command Options:

←↓↑→ Change Option ↵ Select Options  <ESC> Previous Screen
```

- **Hot Key Code** — The Hot Key Code is the series of keystrokes used to jump from a DOS session to a host session. The default is **<Alt><Esc>**. Any key but **<SYS REQ/ATTN>** can be used in a Hot Key Code.

  You can customize the hot key code by pressing **<Enter>** at the Hot Key Code option. A new screen appears representing the keyboard type you chose earlier in the configuration. You will be prompted to choose a key to use with the **<Alt>** key. Press the key of your choice, and then follow the screen directions to exit.

- **Type Ahead** — When **Type Ahead** is enabled, the PC holds characters in its buffer if the host is not ready to accept them when they are typed. Then it sends the characters from the buffer to the host when it is ready for input.

- **Scan Code Customize** — The **Scan Code Customize** option defines keys on the keyboard. Each keyboard uses different scan codes to transmit data from the keyboard to the PC. The keyboard type you select is used on all host sessions during emulation. Factory-default scan codes are shown in Appendix A.

  To change the keyboard scan codes, move the cursor to **Scan Code Customize** and press **<Enter>**. The screen changes, showing the keyboard layout. The keyboard layout shown depends on the keyboard type you chose earlier in the configuration. Follow the steps below to customize the keyboard:

1. Look at the keyboard layout, and determine the code of the key you want to change. At the prompt below the keyboard layout, type in the code.

2. Press **<Enter>** to display the key function. In place of the prompt, the function of the key is displayed in the Normal (unshifted) mode, the Shifted mode, and the Alt mode. The key's normal function is highlighted.

3. Use the up or down cursor arrow keys to highlight the key's mode you wish to change. Press **<Enter>**. A list of all the keys appears in a window at the right of the screen.

4. Use the cursor arrow keys to highlight the function in this window you want to assign to this key. Press **<Enter>**. The window at the right of the screen disappears, and you are returned to the keyboard layout screen. The new description you've assigned appears next to the key's mode.

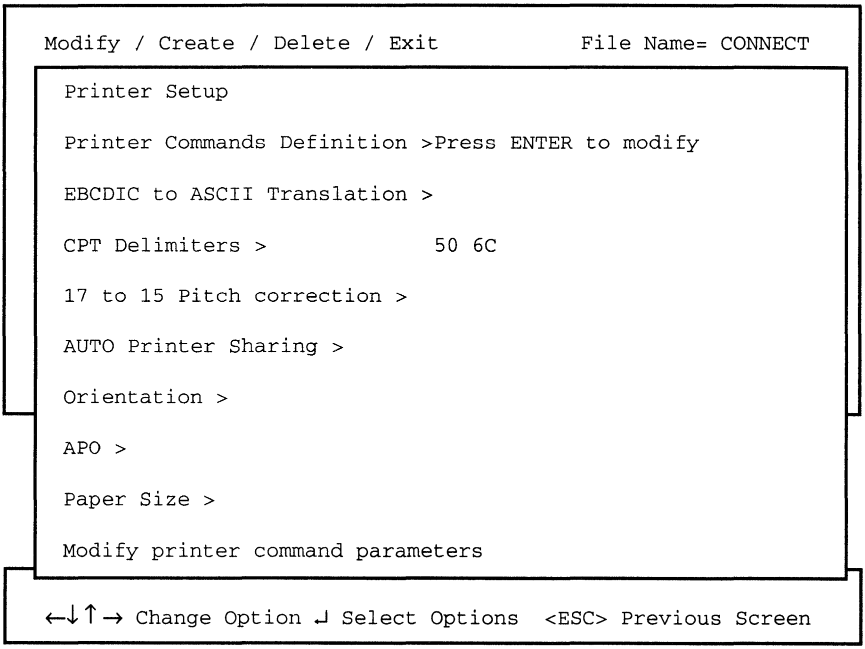
5. Press **<Esc>** and you will be prompted to save this file. Answer **Y** if you want to save this change, or **N** if you don't.

Here is an example of the modification of a keyboard scan code.

- You have a 102-key (enhanced) keyboard, and you want the **<Enter>** key to function as the **<Enter>** key when you're working on the host. Select the **Scan Code Customize** option. A new screen appears, showing the 102-key keyboard layout.
- You look at this layout and find that the **<Enter>** key on the main keypad has a code of **1C**. You type in **1C** at the prompt on the screen and press **<Enter>**. Some information appears under the keyboard layout showing you the function of the key in its Normal, Shifted, and Alt modes.
- You notice the function in normal mode is **field exit**, which you want to change to **enter**. You make sure the highlighted block is on **normal: field exit**, then press **<Enter>**. When the window appears, use the up or down cursor arrow (or page up/down) keys to highlight the function **enter** and press **<Enter>**. The window at the right of the screen disappears, and next to the **normal:** function, you now see **enter**.
- You can make more changes or exit this option as described in Step 5.

Printer

The options in the specialized printer attributes section are used to create a special or unique printer configuration. See the screen on the next page.



```
Modify / Create / Delete / Exit          File Name= CONNECT

   Printer Setup

   Printer Commands Definition >Press ENTER to modify

   EBCDIC to ASCII Translation >

   CPT Delimiters >              50 6C

   17 to 15 Pitch correction >

   AUTO Printer Sharing >

   Orientation >

   APO >

   Paper Size >

   Modify printer command parameters

←↓↑→ Change Option ↵ Select Options  <ESC> Previous Screen
```

These are the Printer Setup options:

- **Printer Commands Definition** — The Printer Commands Definition function is used to define a new printer or modify the command strings for an existing printer. All command strings are in hexadecimal.

  You must fill in these commands if you have chosen Other as the printer type in the Cable Addresses part of the configuration. If you choose a text printer, you will see half a screen of command strings to fill in, ending in the command for Near Letter Quality (NLQ). Look up these command strings in the printer's manual and enter them in hexadecimal to define the printer (command strings may also be known as escape commands).

  If you choose a graphics printer, you will see an additional half screen of command strings that need to be filled in, continuing after the command for NLQ. These additional graphic command strings will probably not be in the printer's manual. You may need to contact the printer's manufacturer for the hex codes for these command strings.

- **EBCDIC to ASCII Translation** — This option is for advanced users only.

  The character codes used by the host are different from those used by the printer. The host uses EBCDIC and the printer uses ASCII. To allow both systems to communicate, an EBCDIC to ASCII translation table is used in the Card's software. This option lets advanced users customize this table. For example, if you want to change the **$** character to print as a **#** character, move the cursor to the EBCDIC to ASCII option and press **<Enter>**. A new screen appears showing the translation table. To change the table, select the EBCDIC code you wish to change. For example, enter the EBCDIC code for a **$** character, which is 5B (see Appendix C for an EBCDIC table). Then enter the ASCII code you want printed (see Appendix C for an ASCII table); in this case, the ASCII code for the **#** character, which is 23.

- **CPT Delimiters** — Command Pass-Thru (CPT) lets you use printer controls not available through host commands. For example, you can select bold printing by placing commands in a host document. The Card recognizes the commands and passes the command through to the printer. A delimiter (usually **&%**) signals the card to pass the command through.

  You can select the delimiter you want by placing the hex codes in the spaces on the screen.

- **17 to 15 Pitch Correction** — Most PC printers do not support 15-pitch printing. Host systems use 15 pitch in many applications. If your printer supports 17 pitch and you would like to print 15 pitch, select this option by moving the cursor to the option and pressing **<Enter>**. When selected, it may cause printers to print very slowly in 15 pitch; other printers may not support the 15-pitch printing feature. Experiment to determine whether your printer will support this feature. This option may also be turned on and off from the Printer Control screen while you are in emulation.

- **AUTO Printer Sharing** — When AUTO Printer Sharing is enabled, you can print from the host or the PC automatically without changing cables or switches when emulation is started. This option may also be turned on and off from the Printer Control screen while you are in emulation.
- **Orientation (3812 only)** — Use this option to select the default print orientation, COR (Computer Output Reduction), Portrait, or Landscape, for the 3812 printer emulation.
- **APO (3812 only)** — Use this option to enable or disable Automatic Page Orientation. When APO is enabled (if COR is enabled, above) Landscape orientation is automatically selected if the paper width is greater than its height, and portrait is selected if the paper width is less than its height.
- **Paper Size** — Use this option to select the size of paper used in the printer:

  Normal =

  Letter size: 8.5 x 11 in. (215.9 x 279.4 mm)

  or

  Legal size: 8.5 x 14 in. (215.9 x 355.6 mm)

  A4 = A4 size: 8.27 x 11.69 in. (210 x 297 mm)

  No Size = Whatever size is loaded in the printer

4.4.2 DELETE A CONFIGURATION

To delete a configuration file, select **Delete**. A list of the files (up to eight) is displayed. Move the cursor to the file you want to delete and press **<Enter>**. The following prompt appears: **Are you sure you want to delete this file (y/n)?** If you type **Y** and press **<Enter>**, the file is erased. If you type **N** and press **<Enter>**, the original screen appears.

4.4.3 EXIT THE CONFIGURATION PROGRAM

After making all the configuration choices, move the cursor to Exit, and press **<Enter>**. The following prompt appears: **Do you want to save this configuration? (y/n).** Type **Y** to save the new configuration and exit to DOS or **N** to exit to DOS without saving the new configuration.

5.0 Operation

With the 5250 Half Card Emulator and software installed and configured, you can begin operation with the host. During an active session with the host, the Card lets your PC emulate displays attached via a twinax cable. The printer attached to the PC emulates a system printer even though it's attached to the PC and not a twinax cable.

Each emulated display or printer is called a Logical Unit (LU) or session. When data is sent to and from the host, the Card sends the information to the correct session. Since the sessions act independently of each other and maintain separate communication with the host, you can perform several tasks at the same time. For example, you can start a long job, such as a query, in one session, and hot key to another session to perform another function.

The keyboard and display screen are assigned to only one session at a time. The status line displays the current session number and cable address during emulation. The session number and station address do not have to correspond. In other words, session 1 could have address 2 or 3 on the twinax cable.

You must sign on to each display session separately. Printer sessions start up automatically.

5.1 Starting Emulation

To activate emulation between the PC and the host system, complete the following steps:

5.1.1 HARD DRIVE

1. Change to the 5250 directory: Type **cd \5250** and press **<Enter>**.

2. Type **TWATTACH** and press **<Enter>** (if you created a new configuration file during the configuration process, add a space and the file name after **TWATTACH**). A new screen appears, and the Card begins communication with the host. Messages on the screen inform you of the different sessions and their status.

   After a few moments, a host sign-on screen appears. If you chose **DOS** startup in the Emulator Startup option (under Basic Setup), a DOS screen is displayed, and you will need to hotkey to the host session(s) to begin work on the host.

5.1.2 FLOPPY DRIVE

1. After your computer has booted, insert the software diskette in the floppy drive.

2. Type **TWATTACH** and press **<Enter>** (if you created a new configuration file during the configuration process, add a space and the file name after **TWATTACH**). A new screen appears, and the Card begins communication with the host. Messages on the screen inform you of the different sessions and their status.

   After a few moments, a host sign-on screen appears. If you chose **DOS** startup in the Emulator Startup selection (under the Basic Setup option), a DOS screen is displayed, and you will need to hotkey to the host session(s) to begin work on the host.

5.2 Hotkey Sequence

The hotkey sequence moves you from one session to another. Press and hold the **<Alt>** key and press the **<Esc>** key (or press the custom hotkey sequence you chose in configuration) to move from a DOS session to a host session.

There are a number of ways to use the hotkey sequence:

1. If there is no active printer session, the hotkey sequence moves you from an active host system session to a DOS session. The same key sequence also returns you to a host session from DOS.

2. If a printer LU session is active, the hotkey sequence will rotate you through all available sessions.

3. While using multiple host sessions, there are two hotkey sequences available for your use: direct-access hotkey and round-robin hotkey.

   Direct-Access — This key sequence takes you directly to a host session. It must be enabled on the configuration screen before you use it. For example, to move to host session 3, press and hold **<Alt>** and press **<3>**. This method works only on host sessions (see Figure 5-1).

   Round-Robin — This key sequence takes you sequentially through the available sessions as shown in Figure 5-2. Starting at the current session, this sequence advances to the highest session, then to the Printer Control Screen, and then to DOS. From DOS you can go back to the lowest session and advance through all the sessions again. To use this method, press and hold **<Alt>** and press **<Esc>** (or your customized sequence).

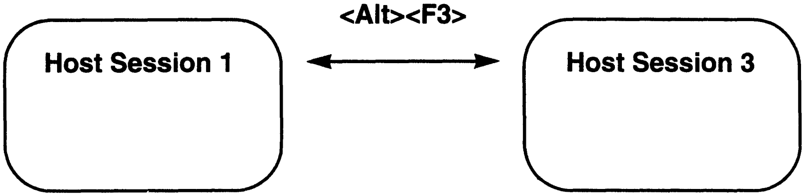


Figure 5-1. Direct-Access Hotkey Sequence.

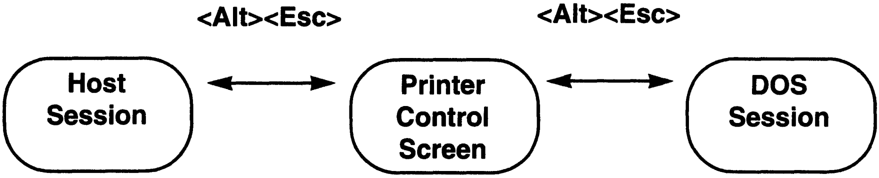


Figure 5-2. Round-Robin Hotkey Sequence.

5.3 Status Line

The bottom line of the screen is the session status line. It displays information sent from the host, identifies which host address and session is currently accessed, and highlights other information regarding the active sessions. See Table 5-1 for a list of the status line characters and their meaning. A status character is active when highlighted.

Table 5-1. Status Line Characters.

Character	Meaning (When Activated)
rr-cc	CURSOR LOCATION (row-column) — Identifies the cursor location by row and column
SA	SYSTEM AVAILABLE — The host system is communicating with the active session
MW	MESSAGE WAITING — A message from the host system is waiting for the active session
KS IM	KEYBOARD SHIFT — Keyboard shift is active INSERT MODE — The LU session is in insert mode
II	INPUT INHIBITED — Keyboard is locked, either because the host system has not completed a previous command, or there is a pending error condition
KB	KEYBOARD BUFFERING
Sn	LOGICAL UNIT — Where n is the logical session or unit
An	HOST ADDRESS — Where n is the host address

5.4 Printing

You can print from either DOS applications or host applications on the attached printer. To print from DOS, use either the DOS print command or print through a software program.

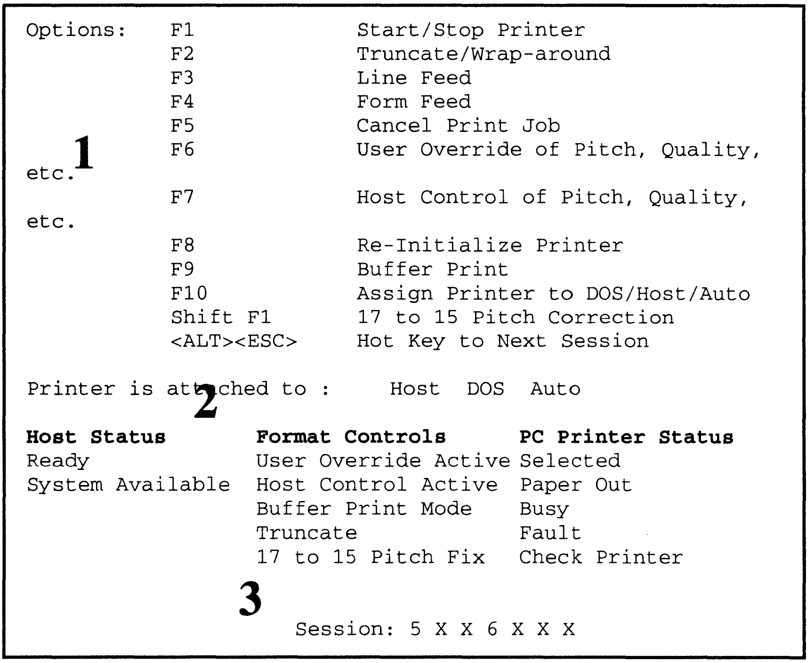
When printing host jobs, specify the attached printer's host ID. This enables the host to route the print job to your printer. The system operator will assign an ID to your attached printer when configuring the printer on the host.

5.4.1 PRINTER CONTROL SCREEN

The printer session controls any host printing sent to the attached printer. The PC is unaware that the printing is taking place, and you can continue to work while host jobs are printing.

Certain printer functions are controlled from the Printer Control Screen. While in emulation, hotkey to the session assigned to the printer. In place of a sign-on screen, you will see the Printer Control Screen.

The Printer Control Screen is divided into three sections:



```
Options:    F1             Start/Stop Printer
            F2             Truncate/Wrap-around
            F3             Line Feed
            F4             Form Feed
            F5             Cancel Print Job
            F6             User Override of Pitch, Quality,
etc.
            F7             Host Control of Pitch, Quality,
etc.
            F8             Re-Initialize Printer
            F9             Buffer Print
            F10            Assign Printer to DOS/Host/Auto
            Shift F1       17 to 15 Pitch Correction
            <ALT><ESC>     Hot Key to Next Session

Printer is attached to :    Host   DOS   Auto

Host Status         Format Controls      PC Printer Status
Ready               User Override Active Selected
System Available    Host Control Active  Paper Out
                    Buffer Print Mode    Busy
                    Truncate             Fault
                    17 to 15 Pitch Fix   Check Printer

                       Session: 5 X X 6 X X X
```

1. To select any of the functions in section 1, press the indicated function key. See Table 5-2 for a description.

2. Section 2 of the Printer Control Screen shows host and PC printer status. These indicators highlight important information regarding the printer's status when it is assigned to either the host or the PC.

   Printer attached to — Indicates which system the printer is attached to: the host, DOS, or auto. If attached to the host, you are able to send print jobs from the host to your PC printer. If attached to DOS, your printer will not accept print jobs from the host, but a PC print job can print. "Auto" allows the Card to automatically switch from host to PC printing and vice versa without going back to the printer control screen (DOS print jobs will only print if you are in the DOS session). The screen will show which is active in reverse image. See Table 5-3 for information on these messages.

3. The Active Display Session is displayed in reverse video at the bottom of the status section of the Printer Control Screen. The host cable address number is also shown.

Table 5-2. Printer Commands.

Command	Printer Function
F1	START / STOP — Press F1 to start the printer, temporarily suspend printing for printer adjustments, or after you receive a printer error.
F2	TRUNCATE / WRAP-AROUND — In truncate mode, narrow-carriage printers ignore data beyond 8". In wrap mode, the data prints on the next line.
F3	LINE FEED — Advances the paper in the printer one line each time F3 key is pressed
F4	FORM FEED — Advances the paper to the top of the next page and reset the line and column counts to one
F5	CANCEL 3X PRINTER JOB — Sends a cancel request to the System/3X host console. This will not cancel data already in the printer buffer.
F6	USER CONTROL OF PITCH, PRINT QUALITY AND LINE SPACING — Define the pitch, print quality and line spacing for the attached PC printer. Host commands which alter these values are ignored.
F7	HOST CONTROL OF PITCH, PRINT QUALITY AND LINE SPACING — With this enabled, host commands control pitch, print quality, and line spacing.
F8	RE-INITIALIZE PRINTER — Returns to the original printer configuration.
F9	BUFFER PRINT — Prints all host commands for diagnostic use.
F10	ASSIGN PRINTER TO DOS/HOST/AUTO — Prints only DOS jobs when DOS is highlighted, only host jobs when Host is highlighted, or automatically selects from host or DOS when Auto is highlighted.
SHIFT F1	Shift from 17-pitch to 15-pitch printing (5219 emulation does not support this function).
ALT ESC	HOT KEY TO DOS — Leave the Printer Control Screen and return to DOS mode.

Table 4-3. Printer Status Indicators.

Status Message	**Status Indicators**
	HOST PRINTER
READY	The printer is ready to receive data.
SYSTEM AVAILABLE	The host system is operational.
CHECK PRINTER	An error condition, such as a paper jam or paper out, has been detected by the printer.
USER OVERRIDE ACTIVE	After selecting F6 this indicator remains highlighted. Host commands for pitch, print quality, and line spacing are ignored.
HOST CONTROL ACTIVE	The host commands for pitch, print quality and line spacing are active (F7).
BUFFER PRINT MODE	The printer is in buffer print mode (F9).
TRUNCATE	When highlighted, truncate mode is active. Select F2 to release.
17 to 15 PITCH FIX	When highlighted, the 17 to 15 pitch correction is active. Press SHIFT F1 to release.
	PC PRINTER **Parallel Printer**
SELECT	Printer powered on and ready to receive data.
PAPER OUT	Printer is out of paper and must be reloaded before continuing.
BUSY	Printer is processing data.
FAULT	Indicates a problem with the printer such as paper out, forms jam, hardware failure, etc.
CHECK PRINTER	A general indicator that operator intervention is required for the printer.
	Serial Printer
PRINTER READY	Indicates that the printer is powered on and ready to receive data.
CHECK PRINTER	A general indicator that operator intervention is required for the printer.

5.4.2 PRINTER OVERRIDE SCREEN

Press **<F6>**, User Override of Pitch, Quality, etc., from the Printer Control Screen and a new screen is displayed. This is the **Printer Override** screen. This screen allows you to change settings for the printer when printing host print jobs. Once Printer Override is activated, host commands are ignored and your choices on this screen control the printing.

NOTE

You cannot start a PC print job from this screen. For example, if you are using a Lotus® 1-2-3® spreadsheet, you would send a print command from Lotus in the normal fashion, just as though you were not in emulation with the host system.

Select any of the printer controls by pressing the **F** key shown to the left of the control description. The printer must be in a ready state before these selections take effect. If the printer is not ready, a message is displayed and the selection does not take effect.

5.4.3 AUTOMATIC PRINTER SHARING

The Card automatically switches from PC printing to host printing and vice versa. This is accomplished by a timeout at the end of a print job. If there's no further data from the last print job during the 10-second timeout, the Card switches to the other printing source.

To activate automatic printer sharing, press **<F10>** from the Printer Control Screen until Auto is highlighted at the bottom of the screen.

The printer appears busy to the PC when a host job is printing. This may cause the PC job to terminate. To prevent PC print termination, set the printer port to **infinite retry** through the DOS MODE command.

NOTE

DOS jobs print only while you're in the DOS session. If you hotkey to a host session while printing a DOS job, printing will be suspended until you return to the DOS session.

5.5 PC Support

PC Support is an IBM host/PC communication program. Used with the PC Support program, the 5250 Half Card Emulator provides access to virtual disk, virtual printer, and shared folder functions. The Card is compatible with PC Support/36, /38, and /400.

Before using PC Support, the system operator must obtain and load the appropriate software on the host. The PC must have PC Support software loaded. Follow the instructions provided with the PC Support software to load the software on the PC. The screen prompts you to change diskettes when necessary. During installation, a directory named PCS is automatically created on the target drive to store the PC Support software. Load the PC Support software on the PC's hard drive if one is installed. After loading the software, reboot the PC.

- **PC Support/36** — During the installation of the IBM PC Support/36 software on the PC, when asked for the type of emulation program, specify **other** and enter the Card's emulation program name: **TWATTACH.EXE**.
- **PC Support/38** — Follow the installation instructions in the IBM PC Support/38 technical reference manual using the instructions for the IBM Enhanced Emulation. When starting the emulator, do not specify the virtual source drive if you specified one during the Card configuration. For all references to the virtual source drive, use the virtual disk drive you specified in the Card configuration.

NOTE

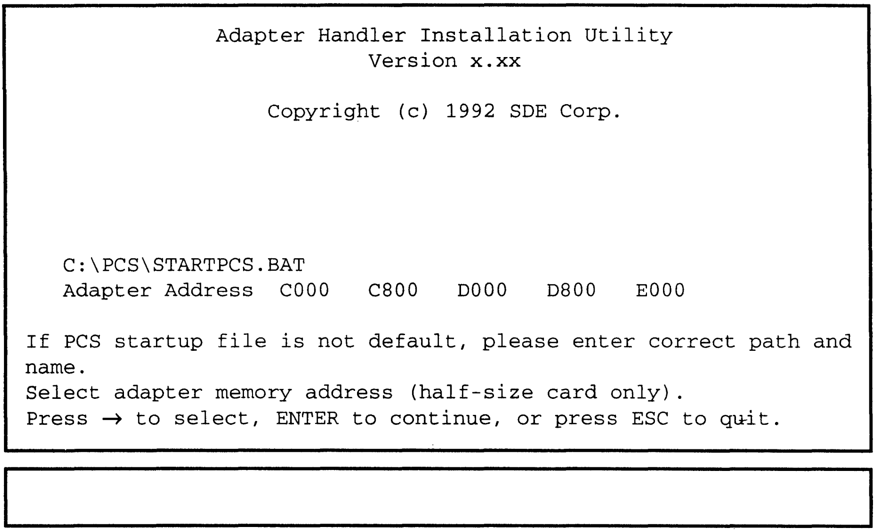
While using PC Support/36 or /38, you must use the original <Alt><Esc> key sequence to hotkey between sessions. If you have customized your own hotkey, it will not work while using PC Support.

- **PC Support/400** — To use IBM AS/400 PC Support, you must do the following:

1. Install the IBM PC Support software, following the IBM instructions for a twinax connection.

2. Insert the 5250 Half Card Emulator software diskette into drive A.

3. Change to the A drive, type **install**, and press **<Enter>**. The screen on top of the next page appears.



```
                    Adapter Handler Installation Utility
                                Version x.xx

                        Copyright (c) 1992 SDE Corp.




     C:\PCS\STARTPCS.BAT
     Adapter Address  C000   C800   D000   D800   E000

  If PCS startup file is not default, please enter correct path and
  name.
  Select adapter memory address (half-size card only).
  Press → to select, ENTER to continue, or press ESC to quit.
```

4.Type in the path where the IBM PC Support software is loaded, then press **<Enter>**.

5.Using the arrow keys, select the correct memory address (default is D000) and press **<Enter>**.

When the installation is finished, this message appears: **Successful installation. Hit any key to exit.**

6.Remove the 5250 Half Card Emulator software diskette from drive A and reboot the PC.

5.5.1 FILE TRANSFER

The File Transfer function lets you transfer files from the host to the PC (download) and from the PC to the host (upload). If you plan to use the transferred files in an application, make certain the application will accept the file format.

The 5250 Half Card Emulator software is compatible with many file transfer utilities, such as a PC Support/36, /38, /400 and third-party packages such as ETU™.

There are three selections that must be defined during the Card's configuration for file transfer to function:

1. Session 1 must be a display device, not a printer.
2. You must specify a virtual disk name.
3. You must select **On** for the File Transfer option.

   Once the Card is configured for file transfer, refer to the file transfer utility program manual for instructions on how to proceed.

5.5.2 VIRTUAL DISK

You can store data on the host system using virtual disk storage. In this function, a portion of the host disk is assigned to the PC. This disk space can be accessed as another disk drive. It expands PC storage capacity and allows access to data by other PCs.

5.5.3 VIRTUAL PRINTER

Virtual printer lets you print data from the PC to a host system printer. You must configure this function when you install the IBM PC Support software on the PC.

For greater detail regarding file transfer, virtual disk, and virtual printer applications, refer to your IBM PC Support manuals and related publications.

5.6 Ending Emulation

After finishing your work in a host session, make sure you follow the logoff procedure for each active display session (if you're unsure of the logoff procedure for your host, ask your system operator). Then, while at a sign-on screen, press the **<Ctrl><Alt><Del>** keys at the same time. This ends emulation for all host sessions and returns you to DOS.

6.0 Advanced Features

The 5250 Half Card Emulator's standard option (for seven sessions) offers some unique features for users needing extra productivity tools: Record/Playback, 5219 or 3812 printers emulations, and Command Language.

6.1 Record/Playback

The Record/Playback feature lets you record a sequence of keystrokes for later playback at the press of one key. This is helpful for information you use often.

To control the Record/Playback feature, use the following keys:

- **<Alt><F10>** — Record a key (functions as the <Record> key on a 5250 keyboard)
- **<Alt><F8>** — Playback a key (functions as the <Play> key on a 5250 keyboard)
- **<Alt><F7>** — Delete a Record/Playback key
- **<Alt><F9>** — Clear all Record/Playback keys

6.1.1 RECORDING A SEQUENCE

To record a keystroke sequence, follow these steps:

1. Press and hold the **<Alt>** key, then press **<F10>**. The number in the lower left of the screen is the number of keystrokes available for recording (maximum of 1,000).
2. Press the function key (**F1-F10**) you wish to assign to the recorded sequence.
3. Type the keystroke sequence you want to record.
4. When finished with the keystroke sequence, press **<Alt><F10>** to save the sequence and exit Record mode.
5. To permanently save a recorded sequence, you must save it to the disk of your PC. To do this, hotkey to DOS, then change to the drive and directory where the software is stored. Type **savekeys** and press **<Enter>**. A message will inform you that the recorded keys are saved.

Each time you start emulation, the emulator software will load the file **savekeys.dat** at the same time, so you can use the keystroke sequences you have saved.

6.1.2 PLAYING A RECORDED SEQUENCE

Follow these steps to play back a recorded sequence:

1. Press **<Alt><F8>** to enter Play mode. A blinking **P** appears in the lower left of the screen.
2. Press the function key (F1-F10) containing the recorded sequence you want to play.
3. The playback begins at the cursor location. When finished, the playback exits Play mode.

NOTE

Some keys such as <Alt> and <Shift> count as two keystrokes—one when pressed and another when released.

6.1.3 DELETING A SEQUENCE

To delete a recorded sequence, press **<Alt><F7>**. A blinking **D** appears in the lower left of the screen. Press the function key that contains the recorded sequence you wish to delete, and the sequence is deleted.

6.1.4 CLEARING ALL SEQUENCES

To clear all recorded keystroke sequences assigned to all the function keys, press **<Alt><F9>**. A prompt in the lower left of the screen asks, **Clear All (Y/N)?** If you want to clear all the recorded sequences, press **Y**.

6.2 5219 Printer Emulation

The Card's 5219 emulation is for HP LaserJet or LaserJet type printers. You must select the 5219 printer emulation in the Cable Addresses options during configuration (see Chapter 4). The HP LaserJet printer will be automatically used when you select the 5219 emulation.

Normal word-processing functions (underlining, bold, super and subscripting, etc.) are all supported, even on small and italic fonts. This emulation can be used for either word-processing or data-processing applications.

You control the different character styles and pitch through the IBM typestyle number or font ID. The Card uses the IBM typestyle number to select an HP font from a cartridge. Only the cartridges shown in the Typestyle Reference Chart in Appendix B are supported.

The system operator will specify a default typestyle when configuring the 5219 address on the host system. The default should be the typestyle you use most. Select one of the typestyle numbers from the Typestyle Reference Chart in Appendix B with an "*" beside it for the default font ID, then change it as necessary in your word-processing document or data-processing document RPG program.

If you send a data-processing (DP) report to the printer, you must change typestyles in the printer's CL or OCL statement (see below).

6.2.1 DATA PROCESSING

Condensed print and 8 LPI commands do not work in data-processing documents, because 5219 printers understand font ID commands only. For data-processing documents, such as RPG-generated prints, the system default typestyle is used unless you change fonts by specifying the typestyle in the OCL or CL printer statement. Since only certain fonts are accepted by the host in OCL and CL statements, you can use only the font IDs from the Typestyle Reference Chart in Appendix B with an * beside them.

To change typestyles in DisplayWrite/36, use one of the following commands:

- CMD 20, selection no. 1
- CMD 20, selection no. 4
- CMD 9, selection no. 7

See your DisplayWrite® manual for more information on changing typestyles.

You can print 198-column documents at 19 pitch and 8 LPI in Landscape orientation on an 8.5" x 11" page. This is particularly useful for data-processing reports. Simply specify the 19-pitch font, typestyle number 225. In data-processing printing, use this typestyle number as either the default font ID, as described above, or in the OCL or CL statement for the job.

6.2.2 WORD PROCESSING

When you configure a 5219 address on the host, you must select a default font ID. The normal value is 11 (or 0B in hex), which is a 10-pitch font. DisplayWrite/36 machines may also have a default typestyle number, in most cases number 86, a 12-pitch font. The LaserJet resident font is a 10-pitch font. If you use typestyle number 86, it will compress to 12-pitch spacing on the printout. Use typestyle number 11 for the correct 10-pitch font.

There are two ways to change fonts for word-processing documents: select a typestyle within the word-processing program, or use a font-change command in the document.

Your word-processing program's manual describes how to change the typestyles within the program.

Some word-processing programs, such as Text Management/38, do not allow you to choose more than one typestyle number per line of text. In such cases, you can use font-change command.

See Section 6.4 for information on font-change commands for your word-processing documents.

6.2.3 PAGE LENGTH

The 5219 emulation allows 65 lines at 6 LPI per page for word-processing documents and 66 lines at 6 LPI per page for data-processing documents. The HP LaserJet printer allows a maximum of 63 lines at 6 LPI. To print 65 lines, the Card narrows line spacing from 6 lines per inch to about 6.25 lines per inch. This small change is normally not noticeable. A similar small change is made to 8 LPI printing. If you get one or two lines at the top of a page, it's usually because you have formatted for more lines (either 65 or 66) than your printer is able to print.

6.2.4 PAPER SIZE

Configure the printer's setup to the paper size you use most. The emulator card only recognizes these paper sizes:

- **Letter Paper** — 8.5 x 11 in. (215.9 x 279.4 mm)
- **Legal Paper**— 8.5 x 14 in. (215.9 x 355.6 mm)
- **A4 Paper** — 8.27 x 11.69 in. (210 x 297 mm)

If you choose any other paper dimensions in the word-processing program, the Card ignores them and uses the previous paper size choice.

The **No Paper Size** selection uses the paper installed in the tray, regardless of size. The **A4 Size** selection uses A4 paper only.

Selecting legal or A4 size paper dimensions on the DisplayWrite/36 **Change Page Format** screen causes the LaserJet display window to flash **Legal Paper**. You'll need to install an HP legal-size paper tray in the printer. If you specify paper dimensions different from the above, the paper size is unchanged.

For Text Management/38, the System/38 does not send paper dimensions to the printer. Instead, it sends a forms message for legal paper to the controlling work-station assigned to the printer.

To change the paper tray, you must do the following:

1. Insert the proper size paper tray, and press the RESET button on the printer.
2. Power the printer off and back on.
3. Release the print job at the host.

The System/38 uses a **Printer Support Facility** that sends the margins and other document form specifications to a printer only when they are different from the previous document or when the printer has been turned off. Either way, the LaserJet must be reset when a different paper tray is installed.

The line-format screens in DisplayWrite/36 (Command 20) also permit you to select **Justify**, which aligns the right margin. **One-Half Justify** causes only one-half as much alignment of the right margin. For best results in using justification, change the zone width to **1** (instead of 6).

6.2.5 ENVELOPE PRINTING

To print envelopes, specify typestyle number **5**, landscape orientation, with the first line of the address on line 30 and a left margin of 55. A trial run with a blank sheet of paper will often help you identify an error in positioning the address.

- **MANUAL FEED** — Select the **Envelope Feed** option in the word-processing program's paper feed selections and a paper size of 11" x 11". The printer will flash "Manual Feed" on the front-panel display window. You will need to manually feed an envelope.
- **ENVELOPE TRAY** — Select **Envelope Feed** and a paper size of 7.5" or 9.5" (or 22.0 cm). The printer automatically finds the envelope tray (if installed) and prints from the tray.
- **ENVELOPE FEEDER** — Select **Envelope Feed** and a paper width of 7.5" or 9.5" (or 22.0 cm). The printer automatically finds the envelope feeder (if installed) and prints from the feeder.

NOTE

The LaserJet may eject a blank page when you change printing orientation.

6.2.6 DUPLEX PRINTING

Some LaserJet models can print both **simplex** (single sided) and **duplex** (double sided). They can print both **long edge** (Landscape) and **short edge** (Portrait) duplex printing.

You can put the printer into duplex mode through the printer's front panel. However, if some users want simplex and others want duplex printing, changing the printer's mode through the front panel can be time consuming. Instead, you can place printing commands on the first line of your document to control simplex, Landscape duplex, and Portrait duplex printing. These commands are similar to font-change commands:

- **¬D0** for simplex printing
- **¬D1** for Landscape duplex printing
- **¬D2** for Portrait duplex printing

Remember to place these commands on the first line of your document, if they are not on the first line, the commands will not become active until the following page. When the printer receives one of the printing commands, it will do all printing in that mode until another printing command is received. If your printer is most often in simplex mode and you are printing in duplex mode, be sure to put a simplex command at the end of your document to return the printer to simplex mode. Envelope printing between documents won't change the printer's mode.

On some duplex printing, if the last page is blank on the back side, the information for the last page may remain in the printer until the next printing job is received. If you want to print the last page, take the printer off-line by pressing the **ONLINE** button, then press the **FORM FEED** button to print the last page. Put the printer back on-line by pressing the **ONLINE** button again.

6.3 3812 Printer Emulation

The Card lets an attached HP or IBM 4029 laser printer to emulate the IBM 3812 printer. Select the 3812 emulation and a printer type of HP, HP 4029, or PPDS 4029 when you configure the emulator card (see Chapter 4).

The IBM 3812 printer is a laser printer. It provides font changing capability plus text rotation and compression features called COR (Computer Output Reduction) and APO (Automatic Page Orientation). The emulator card's 3812 emulation (non IPDS) provides font changes and a true 3812 COR emulation. It also obeys the host commands for duplexing like an IBM 3816 printer.

The system operator will specify a default typestyle when configuring the 3812 address on the host system. The default should be the typestyle you use most. Select one of the typestyle numbers from the Typestyle Reference Chart in Appendix B with an * beside it for the default font ID, then change it as necessary in your word-processing document or data-processing document RPG program.

6.3.1 DATA PROCESSING

To change font IDs for a data-processing report, you must add the font to the CL or OCL printer statement. For the System/36, you must convert the font number to hexadecimal before adding it to the printer statement. Only the font IDs marked with an * in the Typestyle Reference Chart in Appendix B can be used in host printer statements.

The 3812's COR feature rotates data-processing reports to landscape orientation and compresses the text to fit 198 columns x 66 lines on the page. The steps below describe printing using the COR feature. Refer to Figure 6-1.

1. If you specify an STO (Set Text Orientation) command, the report prints using the STO command to control orientation in the specified font. If an STO command is not specified, the report continues to block 2.
2. If Auto Page Orientation (APO) is enabled, the report continues to block 3. With Auto Page Orientation disabled, the report continues to block 4.
3. At block 3, the page size is calculated. If the page size is valid (8.5" x 14" or smaller) the report continues to block 6. The report prints at block 6 depending upon the page layout.

   An invalid page size (larger than 8.5" x 14") causes the report to continue to block 4.
4. At block 4, the orientation selected in the configuration program determines the output. If Landscape is selected, the report prints in Landscape using the specified font. If Portrait is selected, the report prints in Portrait using the specified font.
5. A COR override from the host determines the report orientation. Host COR overrides include:

   System/36 OCL: Text-Yes or Rotate-0

   System/38 CL: PRT QLTY (*STD) or (*NLQ), or PGRTT(0)

   AS/400: PRT QLTY (*STD) and PAGRTT (*COR)

   A host COR override causes the report to print in Portrait with the selected font.

   If the host does not override the COR, the report prints in Landscape orientation with the CPI and LPI reduced as shown in the diagram.

   The printer prints a maximum of 182 columns x 64 lines (IBM mode) or 198 columns x 66 lines (HP mode) when using COR to control the output.

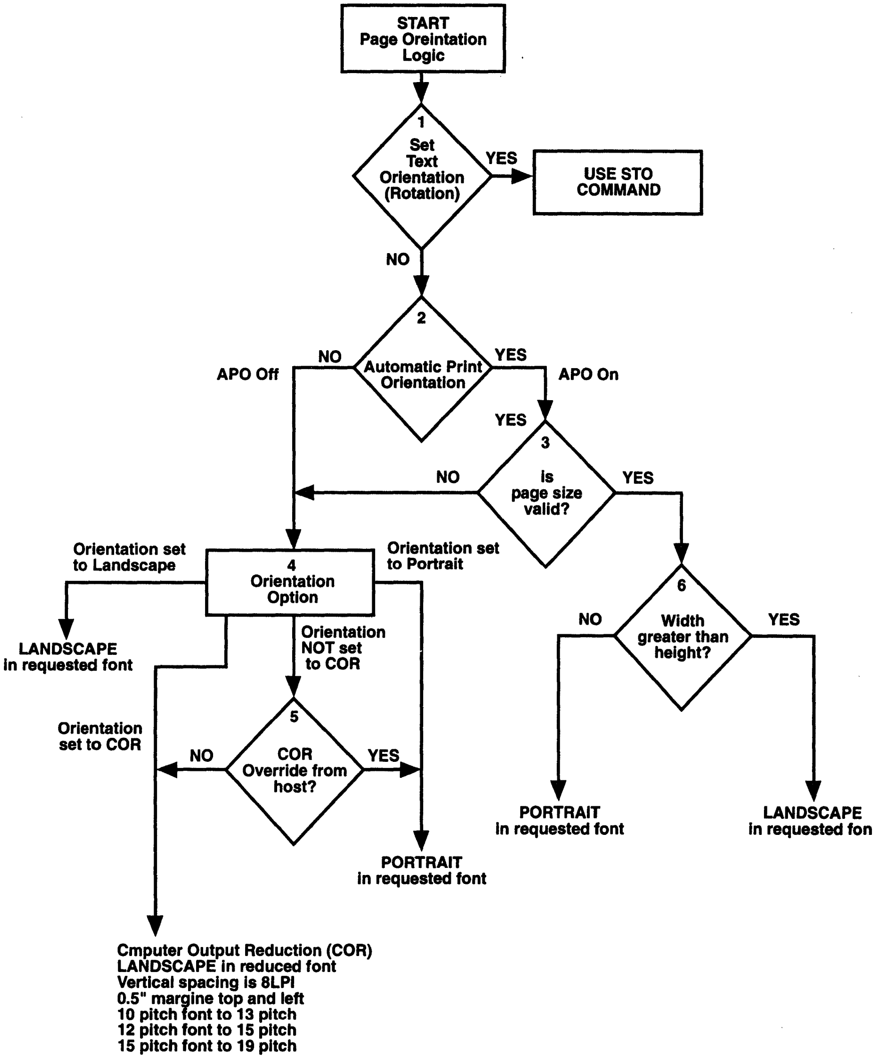


Figure 6-1. 3812 Page Orientation Logic Chart.

6.3.2 WORD PROCESSING

When your system operator configures the printer on the host, a default font ID is configured for the printer. The default font ID should be the most commonly used font. The word-processing program may also have a default font ID. Since the default font ID can vary depending upon the system setup, ask your system operator if you have questions about the default font ID on your system.

To change the font, you can use font-change commands, or you can select a font ID number within the word-processing program. Refer to the word-processing program's manual for information on changing font IDs within the program. Section 6.4 has information on font-change commands for word-processing documents.

The Card allows bolding, underlining, and super/subscripting by recognizing the host commands for these features in the word-processing document. The Card uses a shadow print for bolding even on small and italic fonts.

6.3.3 PAGE LENGTH

The printer prints up to 66 lines at 6 LPI in HP mode (the line spacing may be compressed slightly to fit) or 64 lines at 6 LPI in IBM mode. The System/36 allows only 65 lines per page. If you get one or two lines at the top of a new page, it's usually because you have formatted more lines per page than can print.

6.3.4 PAPER SIZE

Configure the printer's setup to the paper size you use most. The Card recognizes only these paper sizes:

- **Letter Paper** — 8.5 x 11 in. (215.9 x 279.4 mm)
- **Legal Paper** — 8.5 x 14 in. (215.9 x 355.6 mm)
- **A4 Paper** — 8.27 x 11.69 in. (210 x 297 mm)

If you choose any other paper dimensions in the word-processing program, the Card ignores it and uses the previous paper size choice.

The **No Paper Size** selection uses the paper installed in the tray, regardless of size. The **A4 Size** selection uses A4 paper only.

The following describes how to select legal size paper in DisplayWrite/36 or AS/400 Office.

1. Choose legal-size paper on the host and send the print job.
2. The printer's operator panel displays 3 for **Load paper request**. Install the legal-size paper tray in the printer.
3. Press **Start/Stop** on the printer operator panel to continue.

The System/38 sends margins and other format specifications to a printer only when they are different from the previous document or when the printer has been turned off. To choose a different size paper, you must:

1. Select a paper size in the program.
2. Install the correct paper size in the printer.
3. Turn off the printer for about five seconds, then turn it back on.
4. Release the job for printing at the printer's controlling workstation.

6.3.5 BIN SELECTION

The Card selects paper from bin 2 only if the optional paper tray is installed in the printer. If you choose bin 2 or 3 in a host document, the printer will print from bin 1 if the optional paper tray is not installed, or bin 2 if the optional paper tray is installed.

6.3.6 ENVELOPE PRINTING

Use Landscape orientation for envelope printing with the first line of the address on line 30 and a left margin of 55. A trial run with a blank sheet of paper helps in positioning the address.

There are three ways to select envelopes:

1. Select **Manual Feed** in the program's paper feed selections and a paper size of 11" x 11". The printer displays 3 on the operator panel. Place envelopes in the manual feed tray and press **Start/Stop**, then press Paper to select manual.
2. Place envelopes in the paper tray and move the tray stops to the proper position. Specify the bin number in the program and the printer prints envelopes from the paper tray.
3. Select **Envelope Feed** in the program's paper feed selections, a paper width of 7.5" or 9.5" (or 220 mm), and paper length of 11.0". The printer automatically finds the envelope feeder (if installed) and prints from the feeder.

6.3.7 DOCUMENT/ENVELOPE PRINTING

You can print a letter and an envelope from DisplayWrite/36 or AS/400 Office in the same document by following this procedure:

1. Set the format for your letter. Enter your letter file. On the first typing line, press **CMD20** for **Change Format**.
2. Select **1** for **Entire Document Options**, then another **1** for **Document Format**. Now select **3** for **Typestyle/Color**.

3. Select the font ID Number for your letter, such as no. **11**, **86**, etc., then press **<Enter>**.

4. From the Document Format screen, select option **4** for **Page Layout/Paper Options**. Scroll to the second screen of these options and select a paper size of 8.5"W x 11"L and a paper source of 1. If the letter is more than one page, select a paper source of **1** for the following pages. Press **<Enter>** to return to the Document Format screen, then **CMD12** to return to the Document Options screen.

5. You can now set up the alternate format for the envelope. Select **2** for **Alternate Format**, then **3** for **Typestyle/ Color**. Select the font ID for the envelope, such as **5**, and press **<Enter>** to return to the **Alternate Format** screen.

6. Select **4**, **Page Layout/Paper Options**. Choose a first typing line of 11, then scroll down to the second screen of the options and choose a paper width of 7.5 (monarch) or 9.5 (commercial, or #10 size) and a paper length of 4 inches. For a paper source, select **5** for **Envelope Feed**. Press **<Enter>** to return to the **Alternate Format** screen.

7. Select option **1** for **Margins and Tabs** and make the left margin **40**. Press **<Enter>** and **CMD3** until you are back in your document.

8. Type in the text. When you're done, add in a **page end** by pressing **<Alt><P>**.

9. Now load in your alternate format for the envelope. To do this, press the **CMD5** key, **Goto**, and type in **rf** for **Resetting Format**. Press **<Enter>**. Select option **4** on the **Alternate Format** screen, **Begin Alternate Format**. Press **<Enter>**.

10. The document is now displayed with the alternate format. The cursor is on the first typing line of 11 with a left margin of 40. Type in the envelope address, and send the file to print. The letter will print out first, then the envelope will print.

NOTE

The printer may eject a blank page when you change printing orientation. If the Buffer light and Ready light remain steady, press the Print/Check button on the printer's operator panel to eject the last page.

6.4 Command Language

The Command Language consists of special codes placed in the document. The 5250 Half Card Emulator recognizes these codes and passes the proper commands to the printer to control the output. These commands may be used in either data-processing or word-processing documents.

There are three types of Command Language commands.

- Font-Change Commands
- Escape Commands
- Command Pass-Thru

6.4.1 FONT-CHANGE COMMANDS

To change fonts using font-change commands, type the font-change command in your document at the place where you want the font change to take effect. The command is immediately active in the document and prints the specified font until the next font-change command is encountered. To change the font back, type a font-change command for the original font at the place in the document you want it to take effect.

For example, to print the word **saves** in the following sentence in a different font with the ProCollection font cartridge loaded in the printer, here is how the sentence might look on the screen:

Quality ¬Q45 saves ¬Q85 you time and money.

The sentence will then print as follows:

Quality **saves** you time and money.

Make sure the correct font cartridge is loaded in the printer for the command entered.

NOTE

The host may send the original font code to the printer at the beginning of each page. If this happens, you may need to put a font change command at the beginning of each page of your document.

If the font-change command changes the pitch, the host may continue to format each line according to the original font ID pitch. For Text Management/38 and other word-processing programs, you may not be able to specify more than one font ID per line.

Typestyle numbers and font-change commands for the fonts and font cartridges used by the 5219 and 3812 printer emulations can be found in Appendix B, Typestyle (FGID) Reference Chart.

Font-change commands are formatted as follows.

5219 Printer Emulation

There are two forms of font-change commands you can use with the 5219 emulation: one selects HP font cartridges and one selects IBM typestyles, as shown below.

- **¬QHB,** where ¬ is a logical not, **Q** indicates a font change, **H** indicates the HP font cartridge, and **B** indicates which font in the cartridge.
- **¬QI225**, where ¬ is a logical not, **Q** indicates a font change, **I** indicates an IBM typestyle number follows, and **225** is the typestyle number (font ID).

3812 Printer Emulation

Font-change commands for the 3812 emulation are entered using the following format:

- **¬Q225**, where ¬ is a logical not, **Q** indicates a font change, and **225** is the typestyle number (font ID).

6.4.2 ESCAPE COMMANDS

You can also enter commands into your document that let you control true 6 LPI and response to host commands. The commands listed below are similar to font-change commands.

- **¬E** — Sends an ASCII ESC command to the printer (HP mode only)
- **¬TY** — Enables true 6 LPI printing (HP mode only)
- **¬TN** — Disables true 6 LPI printing (HP mode only)
- **¬I** — Ignores all host formatting commands
- **¬S** — Stops ignoring host formatting commands

The **¬E** command allows you to send an **Esc** command to the printer (HP mode only) to control the printing. For example, **¬E(s3B** would begin bold printing (see an HP manual for a list of the (sXX commands).

When in HP mode, the printer may compress line spacing to fit 66 lines onto the page. This may be undesirable, such as when using pre-printed forms that must align correctly. In these cases, the **¬TY** command prevents the printer from compressing the line spacing.

Use the **¬I** and **¬S** commands to remove unwanted host commands from a print file. For example, when printing with forms-generating software, the files are recognized by the host as text files and formatted with unwanted carriage returns and line feeds. Placing the **¬I** at the end of a line and **¬S** at the front of the next line causes the Card to remove the host carriage-return and line-feed commands and send only the data to the printer.

6.4.3 COMMAND PASS-THRU

The Command Pass-Thru (hex transparency) feature allows you to access all of the built-in features of a printer, even if these features aren't normally available through the host software. Command Pass-Thru provides a method of placing printer-specific command sequences into the data sent to the printer. The Card recognizes these special sequences and passes the command through to the printer. These steps describe how to use Command Pass-Thru.

1. Find the command for the print feature in the printer's manual.
2. Convert the printer command to hexadecimal.
3. Place the delimiter **&%** (or the custom delimiter) in the document at the point you want the feature to take effect. This signals the start of the print feature. Enter the beginning printer command, then enter the delimiter again. No spaces are allowed.
4. Move the cursor to the point in the text that you want to end the print feature. Enter the delimiter, followed by the ending printer command, and then the delimiter again, into the document.

Example:

If **ESC E** begins bold printing and **ESC F** ends bold printing on your printer, first convert **ESC E** to the hexadecimal **1B45** (ESC = 1B and E=45) and **ESC F** to **1B46.** Then enter the commands as follows:

This is a &%1B45&%bold&%1B46&% word.

to print on the printer as:

This is a **bold** word.

Spaces are not allowed between the delimiter and the hex code.

Only numbers or the letters A-F are allowed.

Errors in the Command Pass-Thru sequence will cause the Card to ignore the command and resume printing at the point the error occurred.

Command Pass-Thru may make horizontal spacing irregular.

7.0 Troubleshooting

The 5250 Half Card Emulator is designed for trouble-free operation. When the PC is powered on, the Card performs diagnostic testing to detect any problems with the its hardware. If there are problems, the Card will not communicate with the host, and the LED at the back of the Card will not come on.

Before calling your supplier, verify that the Card was installed properly, and verify that there are no UMB (upper memory block) conflicts (be sure the Card's memory space is excluded from any memory managers or caching). When you call, have the following information ready:

- Serial number (label on the Card, under the connector)
- Software revision level (label on the diskette)
- Date of purchase
- Model of the printer (if attached)
- Type of host system to which the 5250 Half Card Emulator is attached

The Card is designed for easy installation and reliable operation. If you are having problems, consult this manual and do the following:

1. Verify that you have completed all the installation steps.
2. List any error messages displayed or unique system operational problems observed (see Section 7.1).
3. Write down all possible solutions that you could or have tried.
4. Review the problem resolution guide that follows.
5. After trying these methods, if you are still unable to resolve the problem, call your supplier.

Table 7-1 is a basic troubleshooting guide.

Table 7-1. Troubleshooting Guide.

Problem	Probable Cause	Action
PC does not power on	Power cord not plugged in	Make sure the power cord is plugged into the power outlet and the back of the PC.
	Faulty cord or power outlet	Try a known good cord or outlet.
	No power connections inside PC	Check power connections inside the PC that may have been disconnected during installation of the Card.
Graphics characters or blinking characters appear on the screen	Card not seated properly	Open the PC and check the installation of the Card.
	Memory address conflict	Make sure the card's software memory address is set to an address not used by any other card in the PC.
		On a 386 or 486 computer, try configuring any memory-management software to exclude the memory area occupied by the Card.
		If your 386 or 486 computer uses memory cache, disable caching in the memory area occupied by the Card. This is typically done through the BIOS setup.
		If your 286, 386, or 486 computer uses a 16-bit bus VGA adapter, do one of the following: 1) have address E000 available to the Card, or 2) configure your VGA adapter for 8-bit bus operation.
	Cable address conflict	Check the host cable address and the Card's software cable address.
Improper key-indicator strokes or no keystrokes appear on the screen	Host inhibited	Host may be inhibited—check the screen on the status line.
	Wrong keyboard emulation	Check the keyboard emulation (PC or 5250) in the Card configuration.

Table 7-1 (continued). Troubleshooting Guide.

Problem	Probable Cause	Action
Cursor appears at the top left corner of the screen when trying emulation	Invalid cable address	Check the cable addresses at the host and in the configuration program.
	Unanswered messages at the host	Check the host console for unanswered messages.
Cursor appears in the middle of a blank screen	Memory address conflict	Make sure the card's software memory address is set to a memory address not used by any other card in the PC.
		On a 386 or 486 computer, try configuring any memory-management software to exclude the memory area occupied by the Card.
		If your 386 or 486 computer uses memory cache, disable caching in the memory area occupied by the Card. This is typically done through the BIOS setup.
		If your 286, 386, or 486 computer uses a 16-bit bus VGA adapter, do one of the following: 1) have address E000 available to the Card or, 2) configure your VGA adapter for 8-bit bus operation.
Cursor appears at the top right corner of the screen when trying emulation	Invalid cable address	Check the cable addresses at the host and in the configuration program.
	Improper termination	If the Card/PC is the last device on the cable, make sure it is terminated properly.
	Improper or damaged cabling or connections	Check cables and connections. Substitute known good cables.
"Snow" appears on the screen	Wrong monitor type	Select "Color (IBM)" monitor type in configuration program.

Table 7-1 (continued). Troubleshooting Guide.

Problem	Probable Cause	Action
Printer doesn't work	Printer not configured or configured improperly	Make sure the printer is configured at the host and in the Card configuration
		Check that the printer emulation matches the emulation on the host.
		If "other" is selected in the card configuration program, make sure the printer is described in the "Printer" option or the printer will not work.
	Invalid cable address	Check the cable addresses at the host and in the Card configuration.
	Printer is off line	Make sure printer is on line (online light will be on) and has paper. Send a print screen from DOS (press <Prtsc> or <Shift><Prtsc>) to see if printer is communicating with PC.

7.1 Error Messages

The error messages shown in Table 7-2 are generated by the Card and software during configuration, while starting emulation, or during active emulation.

The IBM Systems/34, /36, /38, and AS/400 also have various error messages to help identify communication problems between the host and your PC or PC printer.

The IBM host also has a help facility designed for error message recovery. Refer to your IBM Technical Reference Manual for further details.

Table 7-2. Error Messages.

Message	Description
Configuration Program Error Messages	
Address Conflict	The same cable address has been assigned to more than one logical unit session.
Bad File Name	The file name cannot be read. A file extension was added when specifying a configuration file name.
Error Creating File	DOS is unable to create a file in the current disk and directory. This is usually caused because the current disk is not available or is write-protected.
Error Deleting File	DOS detects an error while attempting to delete a configuration file. The usual cause is that the current drive is not available or is write-protected.
Error Reading File	The disk file is the wrong size or the data are invalid. If this error occurs while reading a user-created file, the file must be recreated; otherwise, the software should be reinstalled from the original diskette.
Error Writing File	DOS detects an error while trying to write data to the current disk. This is caused because the current disk is unavailable, is write-protected, or is full. If the problem can be corrected, then enter "Y" and the write is retried; otherwise, enter "N" and the write is aborted.
File Already Exists	The file name indicated while creating a new configuration file already exists.
File Could Not Be Found	The file name indicated while modifying a configuration file cannot be found. Verify that the current disk and directory are correct. If so, generate a new configuration file using the Create function.
File Open Error	DOS detects an error while trying to open the requested file. Verify that the current disk and directory are correct; if so, then the emulation software should be reinstalled.

Table 7-2 (continued). Error Messages.

Message	Description
Configuration Program Error Messages	
Invalid Configuration File	The configuration file you are trying to modify is not valid. Verify that you are specifying the correct file. If so, the file should be deleted using the Delete function and recreated using the Create function.
Session is not a Display Session	The logical session specified for file transfer has not been configured or is configured as a printer.
Loading Emulation Software Error Messages	
Configuration File is Invalid	The configuration file specified contains incorrect data. Verify that the correct file is being used. If so, the configuration file must be recreated using the configuration program.
Configuration File not Found	The configuration file specified cannot be located. Verify that the current disk and directory are correct and the correct file is specified.
Device ID in Configuration File is Invalid	An incorrect device was encountered while processing the configuration file. Verify the configuration file and if necessary recreate it.
Emulation Adaptor does not Respond	The 5250 Half Card Emulator has found a problem. Restart emulation by powering the PC down and up. If the problem persists, verify the hardware configuration. If it is correct, contact your supplier.
Emulation Adaptor not Found	The software cannot locate the Card. This is usually a configuration problem. Verify the PC memory address for the Card to ensure it is correct and there is no conflict with some other adaptor. If a configuration problem is not found contact your supplier.
Emulation Adaptor Diagnostic Error	The Card detects an error during power-up. Turn the PC power off then on again. If the problem continues, contact your supplier.

Table 7-2 (continued). Error Messages.

Message	**Description**
Loading Emulation Software Error Messages	
Error Reading Keyboard Definition File	The software cannot read the keyboard definition file. Verify that the current disk and directory are correct. If so, verify that 6 files with the extension .KBD exist on the software diskette. If they cannot be found, copy them from the original software diskette.
Error Reading Printer Definition File	The software cannot read the printer definition file. Verify that the current disk and directory are correct; if so, check the configuration to ensure that the printer is correctly configured. If the problem persists, reinstall the software.
Error Reading 6809F.HEX, 6809Q.HEX, or 6809S.HEX File	The emulation software could not read the emulation adaptor microcode. Verify that the file 6809F.HEX, 6809Q.HEX, or 6809S.HEX exists; if not, copy it from the original software diskette.
Keyboard Definition File is Invalid	The data in the keyboard definition file are incorrect. Get a new copy of all files with the extension .KBD from the software diskette.
Keyboard Definition File not Found	The software is unable to locate the keyboard definition file. If the current disk and directory are correct, get a new copy of the 6 files with the extension .KBD.
Printer Definition File not Found	The software is unable to locate the printer definition file. Verify the printer configuration and, if no problem is found, reinstall the software.

7.2 Host Error Messages

The host system also has a set of error messages to report problems with communication between the host and display station. These four-digit error messages consist of codes 0040 through 0054. See your IBM System/34, /36, /38, or AS/400 Technical Reference Manual for further information on host error messages.

Use the **<Error Reset>** key to clear the error condition and proceed with your host communications. See the keyboard templates for further information.

7.3 AS/400 Error Messages

The error messages in Table 7-3 may be displayed if your host system is the IBM AS/400.

Table 7-3. AS/400 Error Messages.

Message	Description
Emulator adaptor does not respond	Turn the power to the PC off. Restart emulation. If the problem persists, call your dealer.
Emulation adaptor diagnostic error	Turn the power to the PC off. Restart emulation. If the problem persists, call your dealer.
Emulation adaptor not found	Try to change the PC memory address settings. See Chapter 3.
Handler is already resident	If PC Support is not active, reboot the system.
6809FAH.HEX or 6809QAH.HEX file not found	Reinstall the software.
Error reading 6809FAH.HEX or 6809QAH.HEX file	Reinstall the software.
6809FAH.HEX or 6809QAH.HEX is invalid	Reinstall the software.

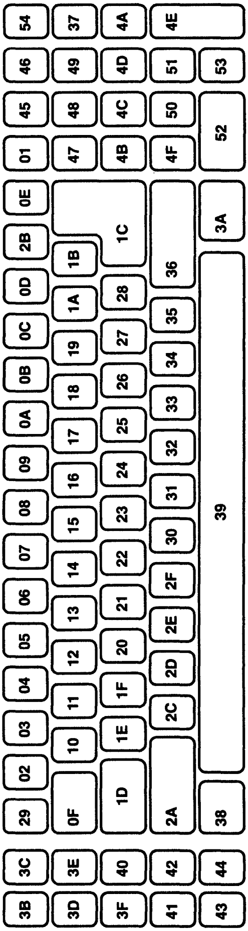
7.4 Avoiding Software Conflicts

The 5250 Half Card Emulator is compatible with most PC application programs. The following information may help you prevent any conflicts.

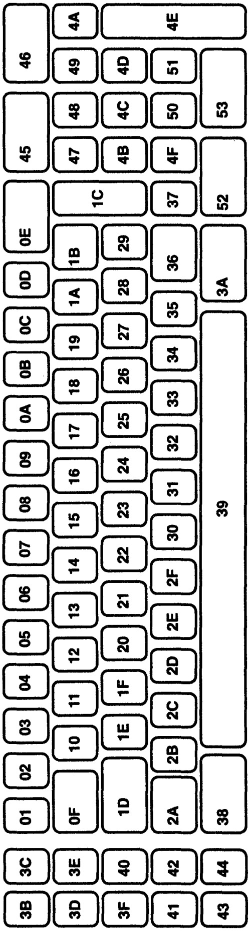
- **Microsoft Windows** — The Card's software is Windows-compatible. Included on the software diskette is a .PIF file for starting emulation from Windows (see Chapter 4).
- **DOS Shell** — Make sure all programs, including the Card's emulation program, are loaded before you load DOS Shell. If the emulation program is loaded from DOS Shell, the next application program may not load properly since the PC's memory is not fully free.
- **43- or 50-Line Mode** — The ANSI.SYS screen driver must be installed when using programs with 43- or 50-line mode, such as Quattro Pro. Otherwise, the number of lines may revert to another size when you hotkey to a host session and then back to the DOS session. The screen colors may change during the hotkeying for some programs (such as MS Works), but the data are unaffected and the screen colors are restored after the next startup.
- **HandsOn** — When using HandsOn or NOVELL® Menu for file transfer, the PC clock may lose the proper time. Data are unaffected.

Appendix A: Scan Codes

The keyboard scan codes shown in this Appendix are the factory defaults. These codes can be changed using the **Advanced Functions, Keyboard, Scan Code Customize** option in the configuration software as described in Chapter 4.

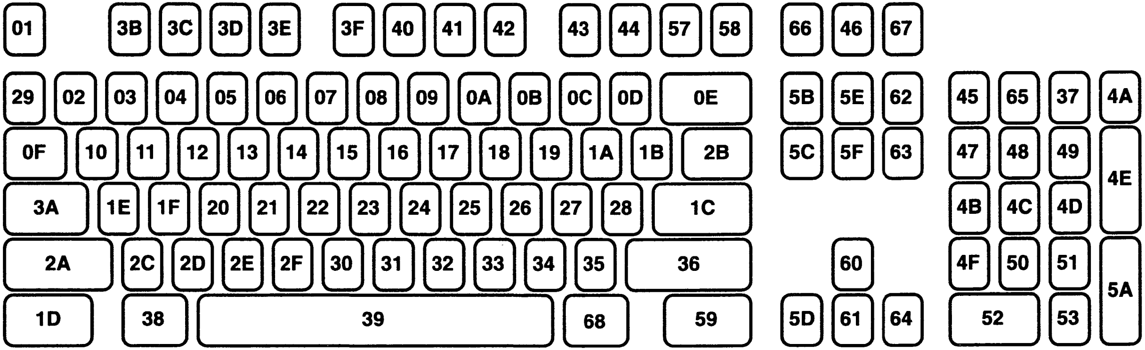

3B 3C 29 02 03 04 05 06 07 08 09 0A 0B 0C 0D 2B 0E 01 45 46 54
3D 3E 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 47 48 49 37
3F 40 1D 1E 1F 20 21 22 23 24 25 26 27 28 1C 4B 4C 4D 4A
41 42 2A 2C 2D 2E 2F 30 31 32 33 34 35 36 4F 50 51 4E
43 44 38 39 3A 52 53

AT Keyboard

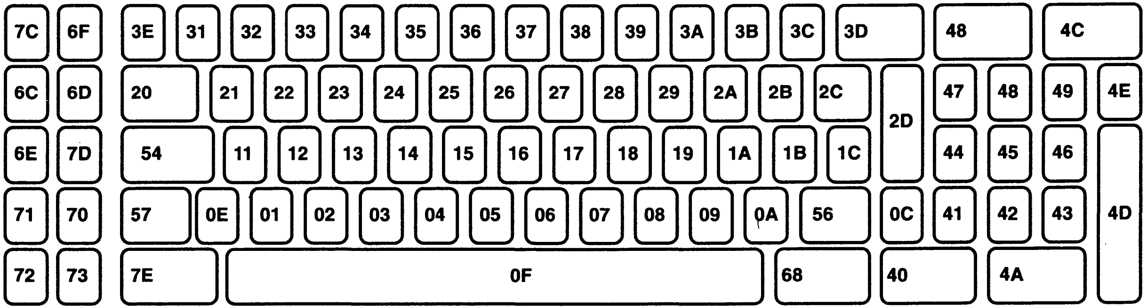

3B 3C 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 45 46
3D 3E 0F 10 11 12 13 14 15 16 17 18 19 1A 1B 47 48 49 4A
3F 40 1D 1E 1F 20 21 22 23 24 25 26 27 28 29 1C 4B 4C 4D 4E
41 42 2A 2B 2C 2D 2E 2F 30 31 32 33 34 35 36 37 4F 50 51
43 44 38 39 3A 52 53

PC Keyboard

Enhanced PC Keyboard


01 3B 3C 3D 3E 3F 40 41 42 43 44 57 58 66 46 67
29 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 5B 5E 62 45 65 37 4A
0F 10 11 12 13 14 15 16 17 18 19 1A 1B 2B 5C 5F 63 47 48 49 4E
3A 1E 1F 20 21 22 23 24 25 26 27 28 1C 4B 4C 4D
2A 2C 2D 2E 2F 30 31 32 33 34 35 36 60 4F 50 51 5A
1D 38 39 68 59 5D 61 64 52 53

5250 Style


7C 6F 3E 31 32 33 34 35 36 37 38 39 3A 3B 3C 3D 48 4C
6C 6D 20 21 22 23 24 25 26 27 28 29 2A 2B 2C 2D 47 48 49 4E
6E 7D 54 11 12 13 14 15 16 17 18 19 1A 1B 1C 44 45 46
71 70 57 0E 01 02 03 04 05 06 07 08 09 0A 56 0C 41 42 43 4D
72 73 7E 0F 68 40 4A

Appendix B: Typestyle Reference Chart

The tables on the following pages list the IBM typestyle numbers (font IDs) that the 5250 Half Card Emulator uses to select fonts internal to the printer and from HP font cartridges. Font-change commands for each font are also listed.

Typestyle numbers with an asterisk (*) next to them are acceptable IBM font IDs for device configuration and OCL or CL printer commands (in hexadecimal).

Font-change commands begin with a logical not (¬), which is upper shift 6 on U.S. keyboards. The caret (^) symbol may be substituted in non-U.S. applications.

Proportional fonts cannot be right-justified through use of the IBM justify command.

B.1 5219 Emulation

The table below lists IBM typestyle numbers and font-change commands for HP LaserJet resident fonts (internal to the printer) and HP font cartridges with the 5219 printer emulation.

NOTE

Typestyle number 86 prints the resident 10 CPI courier font at 12 CPI spacing in portrait (¬QXM). Typestyle number 85 prints the resident 16 CPI Line Printer font at 12 CPI spacing in landscape (¬QXN).

NOTE

Numbers in parentheses are alternatives that more closely match the IBM CPI spacing of the font.

Table B-1. Hewlett-Packard® LaserJet Internal Resident Fonts.

Printer Model	Font	Orient.	Pitch	Point Size	Typestyle Number	Font-Change Command
All Models	Courier	P	10	12	11*	¬ QXG
		L	10	12	5*	¬ QXH
Plus & Series II	Line Printer	P	16.66	8.5	221*	¬ QXJ
Series II	Line Printer (8LPI)	P	16.66	8.5	223*	¬ QXL
Series II	Line Printer (8LPI)	L	19.0	8.5	225*	¬ QLG
			13.3	8.5	91*	¬ QXK

Table B-2. HP Cartridge Fonts.

Font	Orient.	Pitch	Point Size	Typestyle Number		Font-Change Command	
				Standard	Legal	Standard	Legal
A Cartridge							
Courier bold	P	10	12	8	—	¬ QLA	—
	L	10	12	9	—	¬ QLC	—
Courier light	P	10	12	6	—	¬ QLB	—
	L	10	12	7	—	¬ QLC	—
Line Printer light	P	16.66	8.5	221*	—	¬ QLE	—
B Cartridge							
Helvetica bold	P	prop.	14.4	175	—	¬ QBA	—
Tms Rmn med	P	prop.	10	158*	—	¬ QBB	—
Tms Rmn bold	P	prop.	10	159*	—	¬ QBC	—
TmsRmn med itl	P	prop.	10	162*	—	¬ QBD	—
Tms Rmn light	P	prop.	8	154	—	¬ QBE	—
Line Printer light	L	16.66	8.5	255	—	¬ QBF	—
		19.0	8.5	225*	—	¬ QBG	—

Table B-2 (continued). HP Cartridge Fonts.

Font	Orient.	Pitch	Point Size	Typestyle Number		Font-Change Command	
				Standard	Legal	Standard	Legal
E Cartridge							
Letter Gothic medium	P	12	12,	84*	—	¬ QNA	—
	L	12	10	88	—	¬ QND	—
Letter Gothic bold	P	12	10	97	—	¬ QNB	—
	L	12	10	98	—	¬ QNE	—
Letter Gothic med italic	P	12	10	107	—	¬ QNC	—
	L	12	10	108	—	¬ QNF	—
G Cartridge							
Prstg Elite med	P	12	10	80*	90	¬ QGUA	¬ QGLA
Prstg Elite bold	P	12	10	82	92	¬ QGUC	¬ QGLC
Prstg Elt med itl	P	12	10	91	93	¬ QGUB	¬ QGLB
Prestige Elite medium	P	16.66	7	222* (252)	227 (253)	¬ QGUD	¬ QGLD
	L	16.66	7	216 (250)	228 (254)	¬ QGUE	¬ QGLE
		19.0	7	214	—	¬ QGUF	—
Line Draw Set	P	12	12	110	—	¬ QGF	—
H Cartridge							
Courier medium	P	10	12	20*	30	¬ QHUA	¬ QHLA
Courier bold	P	10	12	22	32	¬ QHUC	¬ QHLC
Courier med itl	P	10	12	21	31	¬ QHUB	¬ QHLB
Prestige Elite medium	P	16.66	7	222* (252)	227 (253)	¬ QHUD	¬ QHLD
	L	16.66	7	216 (250)	228 (254)	¬ QHUE	¬ QHLE
		19.0	7	214	—	¬ QHUF	—
Line Draw Set	P	10	12	40	—	¬ QHF	—
L Cartridge							
Courier bold	P	10	12	8	—	¬ QLA	—
	L	10	12	9	—	¬ QLC	—
Courier medium italic	P	10	12	6	—	¬ QLB	—
	L	10	12	7	—	¬ QLD	—
Line Printer medium	P	16.66	8.5	221*	—	¬ QLE	—
	L	16.66	8.5	255	—	¬ QLF	—
		19.0	8.5	225*	—	¬ QLG	—

Table B-2 (continued). HP Cartridge Fonts.

Font	Orient.	Pitch	Point Size	Typestyle Number		Font-Change Command	
				Standard	Legal	Standard	Legal
M Cartridge							
Prestige Elite medium	P	12	10	87*	—	¬ QMA	—
	L	12	10	88	—	¬ QMD	—
Prestige Elite bold	P	12	10	97	—	¬ QMB	—
	L	12	10	98	—	¬ QME	—
Prestige Elite med italic	P	12	10	107	—	¬ QMC	—
	L	12	10	108	—	¬ QMF	—
N Cartridge							
Letter Gothic medium	P	12	12	84*	—	¬ QNA	—
	L	12	12	85*	—	¬ QND	—
Letter Gothic bold	P	12	12	94	—	¬ QNB	—
	L	12	12	95	—	¬ QNE	—
Letter Gothic med italic	P	12	12	104	—	¬ QNC	—
	L	12	12	105	—	¬ QNF	—
Q Cartridge							
Courier bold	P	10	12	8	—	¬ QQA	—
	L	10	12	9	—	¬ QQE	—
Courier medium italic	P	10	12	6	—	¬ QQB	—
	L	10	12	7	—	¬ QQF	—
Ltr Gothic med	P	12	12	84*	—	¬ QQC	—
Ltr Gothic bold	P	12	12	94	—	¬ QQD	—
R Cartridge							
Presentation bold	P	6.5	18	18 (240)	28 (242)	¬ QRUA	¬ QRLA
	L	6.5	18	19 (241)	29 (243)	¬ QRUD	¬ QRLD
Presentation bold	P	8.1	16	16 (260)	26 (262)	¬ QRUB	¬ QRLB
	L	8.1	14	17 (261)	27 (263)	¬ QRUE	¬ QRLE
Presentation bold	P	10	14	14	24	¬ QRUC	¬ QRLC
	L	10	14	15	25	¬ QRUF	¬ QRLF
Letter Gothic medium	P	10	14	12*	34	¬ QRUG	¬ QRLG
	L	10	14	13*	35	¬ QRUH	¬ QRLH
PCLine bold	P	10	14	36	—	¬ QRJ	—
	L	10	14	37	—	¬ QRK	—
Line Draw	P	10	14	38	—	¬ QRM	—
	L	10	14	39	—	¬ QRN	—

B.2 3812 Emulation

The following tables list the IBM typestyle numbers (font IDs) and font-change commands used to change fonts within a document with the 3812 printer emulation. For information on changing fonts, refer to Chapter 5.

Table B-3. HP Mode Fonts.

Typeface	Orient.	Pitch	Point Size	Typestyle Number	Font Change Command
HP LaserJet Internal Resident Fonts					
Courier	P/L	10	12	11	¬ Q11
Line Printer	P/L	15	9	223	¬ Q223
Line Printer	P/L	17.1	8.5	254	¬ Q254
Line Printer	P/L	19	8.0	282	¬ Q282
Line Printer	P/L	13.33	9.5	201	¬ Q201
LaserJet IID, III, IIID Printers have in addition:					
Courier	P/L	10	12	46	¬ Q46
Courier	P/L	10	12	85	¬ Q85
Courier italic	P/L	10	12	18	¬ Q18
Courier bold	P/L	10	12	88	¬ Q88
Courier	P/L	12	10	89	¬ Q89
LaserJet III and IIISi Resident Scalable Fonts					
CG Times	P/L	prop	6	4605	¬ Q4605
	P/L	prop.	8	4606	¬ Q4606
	P/L	prop.	10	4607	¬ Q4607
	P/L	prop.	12	4608	¬ Q4608
	P/L	prop.	14	4609	¬ Q4609
	P/L	prop.	18	4611	¬ Q4611
	P/L	prop.	24	4614	¬ Q4614
	P/L	prop.	30	4617	¬ Q4617

Table B-3 (continued). HP Mode Fonts.

Typeface	Orient.	Pitch	Point Size	Typestyle Number	Font-Change Command
CG Times bold	P/L	prop.	6	4625	¬ Q4625
	P/L	prop.	8	4626	¬ Q4626
	P/L	prop.	10	4627	¬ Q4627
	P/L	prop.	12	4628	¬ Q4628
	P/L	prop.	14	4629	¬ Q4629
	P/L	prop.	18	4631	¬ Q4631
	P/L	prop.	24	4634	¬ Q4634
	P/L	prop.	30	4637	¬ Q4637
CG Times italic	P/L	prop.	6	4645	¬ Q4645
	P/L	prop.	8	4646	¬ Q4646
	P/L	prop.	10	4647	¬ Q4647
	P/L	prop.	12	4648	¬ Q4648
	P/L	prop.	14	4649	¬ Q4649
	P/L	prop.	18	4651	¬ Q4651
	P/L	prop.	24	4654	¬ Q4654
	P/L	prop.	30	4657	¬ Q4657
CG Times bold ital	P/L	prop.	6	4665	¬ Q4665
	P/L	prop.	8	4666	¬ Q4666
	P/L	prop.	10	4667	¬ Q4667
	P/L	prop.	12	4668	¬ Q4668
	P/L	prop.	14	4669	¬ Q4669
	P/L	prop.	18	4671	¬ Q4671
	P/L	prop.	24	4674	¬ Q4674
	P/L	prop.	30	4677	¬ Q4677
Univers medium	P/L	prop.	6	4805	¬ Q4805
	P/L	prop.	8	4806	¬ Q4806
	P/L	prop.	10	4807	¬ Q4807
	P/L	prop.	12	4808	¬ Q4808
	P/L	prop.	14	4809	¬ Q4809
	P/L	prop.	18	4811	¬ Q4811
	P/L	prop.	24	4814	¬ Q4814
	P/L	prop.	30	4817	¬ Q4817

Table B-3 (continued). HP Mode Fonts.

Typeface	Orient.	Pitch	Point Size	Typestyle Number	Font-Change Command
Univers med italic	P/L	prop.	6	4825	¬ Q4825
	P/L	prop.	8	4826	¬ Q4826
	P/L	prop.	10	4827	¬ Q4827
	P/L	prop.	12	4828	¬ Q4828
	P/L	prop.	14	4829	¬ Q4829
	P/L	prop.	18	4831	¬ Q4831
	P/L	prop.	24	4834	¬ Q4834
	P/L	prop.	30	4837	¬ Q4837
Univers med condensed	P/L	prop.	6	4845	¬ Q4845
	P/L	prop.	8	4846	¬ Q4846
	P/L	prop.	10	4847	¬ Q4847
	P/L	prop.	12	4848	¬ Q4848
	P/L	prop.	14	4849	¬ Q4849
	P/L	prop.	18	4851	¬ Q4851
	P/L	prop.	24	4854	¬ Q4854
	P/L	prop.	30	4857	¬ Q4857
Univers med cond ital	P/L	prop	6	4865	¬ Q4865
	P/L	prop.	8	4866	¬ Q4866
	P/L	prop.	10	4867	¬ Q4867
	P/L	prop.	12	4868	¬ Q4868
	P/L	prop.	14	4869	¬ Q4869
	P/L	prop.	18	4871	¬ Q4871
	P/L	prop.	24	4874	¬ Q4874
	P/L	prop.	30	4877	¬ Q4877
ITC Zapf Dingbat	P/L	prop.	6	4985	¬ Q4985
	P/L	prop.	8	4986	¬ Q4986
	P/L	prop.	10	4987	¬ Q4987
	P/L	prop.	12	4988	¬ Q4988
	P/L	prop.	14	4989	¬ Q4989
	P/L	prop.	18	4991	¬ Q4991
	P/L	prop.	24	4994	¬ Q4994
	P/L	prop.	30	4997	¬ Q4997

Table B-3 (continued). HP Mode Fonts.

Typeface	Orient.	Pitch	Point Size	Typestyle Number	Font-Change Command
HP Cartridge Fonts Procollection Cartridge					
Line Printer	P/L	17.1	8.5	253	¬ Q253
Courier Bold	P/L	10	12	45	¬ Q45
Courier Italic	P/L	10	12	17	¬ Q17
Courier	P/L	12	10	85	¬ Q85
Courier Bold	P/L	12	10	108	¬ Q108
Courier Italic	P/L	12	10	92	¬ Q92
Courier	P	10	12	51	¬ Q51
Courier Bold	P	10	12	52	¬ Q52
Courier Italic	P	10	12	53	¬ Q53
Courier	P	12	10	93	¬ Q93
Courier Bold	P	12	10	94	¬ Q94
Courier Italic	P	12	10	95	¬ Q95
Prestige Elite	P/L	15	7	220	¬ Q220
Prestige Elite	P/L	12	10	83	¬ Q83
Prestige Elite Bold	P/L	12	10	113	¬ Q113
Prestige Elite Italic	P/L	12	10	114	¬ Q114
Prestige Elite	P	15	7	219	¬ Q219
Prestige Elite	P	12	10	97	¬ Q97
Prestige Elite Bold	P	12	10	98	¬ Q98
Prestige Elite Italic	P	12	10	99	¬ Q99
Letter Gothic	P/L	27	3.6	291	¬ Q291
Letter Gothic	P/L	19	6	281	¬ Q281
Letter Gothic	P/L	17.1	9.5	257	¬ Q257
Letter Gothic	P/L	12	12	66	¬ Q66
Letter Gothic Bold	P/L	12	12	69	¬ Q69
Letter Gothic Italic	P/L	12	12	68	¬ Q68
Times Roman	P	prop.	8	163	¬ Q163
Times Roman	P	prop.	10	164	¬ Q164
Times Roman Bold	P	prop.	10	165	¬ Q165
Times Roman Italic	P	prop.	10	166	¬ Q166
Times Roman	P	prop.	12	167	¬ Q167
Times Roman Bold	P	prop.	12	168	¬ Q168
Times Roman Italic	P	prop.	12	169	¬ Q169

Table B-3 (continued). HP Mode Fonts.

Typeface	Orient.	Pitch	Point Size	Typestyle Number	Font-Change Command
Times Roman	P	prop.	8	173	¬ Q173
Times Roman	P	prop.	10	174	¬ Q174
Times Roman Bold	P	prop.	10	175	¬ Q175
Times Roman Italic	P	prop.	10	176	¬ Q176
Times Roman	P	prop.	12	177	¬ Q177
Times Roman Bold	P	prop.	12	178	¬ Q178
Times Roman Italic	P	prop.	12	179	¬ Q179
Helvetica	P	prop.	8	183	¬ Q183
Helvetica	P	prop.	10	184	¬ Q184
Helvetica Bold	P	prop.	10	185	¬ Q185
Helvetica Italic	P	prop.	10	186	¬ Q186
Helvetica	P	prop.	12	187	¬ Q187
Helvetica Bold	P	prop.	12	188	¬ Q188
Helvetica Italic	P	prop.	12	189	¬ Q189
Helvetica Bold	P	prop.	14	190	¬ Q190
Helvetica Bold	P	prop.	14	191	¬ Q191
WordPerfect Cartridge					
CG Times	P	prop.	6	4685	¬ Q4685
CG Times	P	prop.	8	4686	¬ Q4686
CG Times Bold	P	prop.	8	4706	¬ Q4706
CG Times Italic	P	prop.	8	4814	¬ Q4814
CG Times	P	prop.	10	4687	¬ Q4687
CG Times Bold	P	prop.	10	4707	¬ Q4707
CG Times Italic	P	prop.	10	4815	¬ Q4815
CG Times	P	prop.	12	4688	¬ Q4688
CG Times Bold	P	prop.	12	4708	¬ Q4708
CG Times Italic	P	prop.	12	4816	¬ Q4816
CG Times	P	prop.	14	4689	¬ Q4689
CG Times Bold	P	prop.	14	4709	¬ Q4709
CG Times Italic	P	prop.	14	4817	¬ Q4817
CG Times Bold	P	prop.	18	4711	¬ Q4711
CG Times Bold	P	prop.	24	4714	¬ Q4714
Univers	P	prop.	14	4789	¬ Q4789
Univers	P	prop.	18	4791	¬ Q4791
Univers	P	prop.	24	4794	¬ Q4794

Table B-3 (continued). HP Mode Fonts.

Typeface	Orient.	Pitch	Point Size	Typestyle Number	Font-Change Command
Microsoft Cartridge					
Helv	P	prop.	8	34102	¬ Q34102
Helv	P	prop.	10	34103	¬ Q34103
Helv Bold	P	prop.	10	34123	¬ Q34123
Helv Italic	P	prop.	10	34231	¬ Q34231
Helv	P	prop.	12	34104	¬ Q34104
Helv Bold	P	prop.	12	34124	¬ Q34124
Helv Italic	P	prop.	12	34232	¬ Q34232
Helv Bold	P	prop.	14	34125	¬ Q34125
Times Roman	P	prop.	8	5686	¬ Q5686
TmsRmn	P	prop.	10	5687	¬ Q5687
TmsRmn Bold	P	prop.	10	5707	¬ Q5707
TmsRmn Italic	P	prop.	10	5815	¬ Q5815
TmsRmn	P	prop.	12	5688	¬ Q5688
TmsRmn Bold	P	prop.	12	5708	¬ Q5708
TmsRmn Italic	P	prop.	12	5816	¬ Q5816
TmsRmn Bold	P	prop.	14	5709	¬ Q5709
Line Printer	P/L	15	8.5	223	¬ Q223
Polished Worksheets Cartridge					
Prestige Elite	P/L	15	7	221	¬ Q221
Prestige Elite	P/L	12	10	86	¬ Q86
Prestige Elite Bold	P/L	12	10	111	¬ Q111
Prestige Elite Italic	P/L	12	10	112	¬ Q112
Prestige Elite	P/L	15	7	219	¬ Q219
Prestige Elite	P/L	12	10	97	¬ Q97
Prestige Elite Bold	P/L	12	10	98	¬ Q98
Prestige Elite Italic	P/L	12	10	99	¬ Q99
Letter Gothic	P/L	27	3.6	290	¬ Q290
Letter Gothic	P/L	12	12	87	¬ Q87
Letter Gothic Bold	P/L	12	12	110	¬ Q110
Letter Gothic Italic	P/L	12	12	109	¬ Q109
Letter Gothic	P/L	27	3.6	292	¬ Q292
Letter Gothic	P/L	12	12	90	¬ Q90
Letter Gothic Bold	P/L	12	12	107	¬ Q107
Letter Gothic Italic	P/L	12	12	106	¬ Q106
Presentation Bold	P/L	8.1	16	434	¬ Q434

Table B-3 (continued). HP Mode Fonts.

Typeface	Orient.	Pitch	Point Size	Typestyle Number	Font-Change Command
Presentation Bold	P/L	8.1	16	431	¬ Q431
Persuasive Presentations Cartridge					
Letter Gothic	P/L	10	14	39	¬ Q39
Letter Gothic	P/L	10	14	38	¬ Q38
Presentation Bold	P/L	10	14	6	¬ Q6
Presentation Bold	P/L	10	14	7	¬ Q7
Presentation Bold	P/L	8.1	16	434	¬ Q434
Presentation Bold	P/L	8.1	16	431	¬ Q431
Presentation Bold	P/L	6.5	18	435	¬ Q435
Presentation Bold	P/L	6.5	18	432	¬ Q432
Presentation Bold	P/L	5.7	24	436	¬ Q436
Presentation Bold	P/L	5.7	24	433	¬ Q433
Helv Outline	P/L	prop.	24	34115	¬ Q34115
Helv Outline	P/L	prop.	24	34116	¬ Q34116
Serifa	P/L	prop.	24	34215	¬ Q34215
Serifa	P/L	prop.	24	34216	¬ Q34216
Line Draw	P/L	10	14	31	¬ Q31
PC Line Bold	P/L	10	14	32	¬ Q32
Forms, Etc. Cartridge					
Univers	P/L	prop.	6	33101	¬ Q33101
Univers	P/L	prop.	8	33102	¬ Q33102
Univers Bold	P/L	prop.	8	33122	¬ Q33122
Univers Bold	P/L	prop.	10	33123	¬ Q33123
Univers Bold	P/L	prop.	12	33124	¬ Q33124
Univers Bold	P/L	prop.	14	33125	¬ Q33125
Helv Cond. Black Bold	P/L	prop.	24	34128	¬ Q34128
OCR-A	P	10	12	19	¬ Q19
Tax Line Draw	P/L	10	12	30	¬ Q30
Bar Codes & More Cartridge					
Letter Gothic	P/L	15	9.5	230	¬ Q230
Letter Gothic	P/L	12	12	87	¬ Q87
Letter Gothic	P/L	10	14	40	¬ Q40
OCR-A	P	10	12	19	¬ Q19
OCR-B	P	10	12	3	¬ Q3
Code 3 of 9	P	8.1	12	60	¬ Q60
Code 3 of 9	P	4.6	12	240	¬ Q240

Table B-3 (continued). HP Mode Fonts.

Typeface	Orient.	Pitch	Point Size	Typestyle Number	Font-Change Command
EAN/UPC 10 Mil	P	prop.	12	170	¬ Q170
EAN/UPC 13 Mil Bold	P	prop.	12	171	¬ Q171
USPS Zip	P/L	prop	12	172	¬ Q172
Line Draw	P/L	10	12	33	¬ Q33
Text Equations Cartridge					
Prestige Elite	P	15	7	221	¬ Q221
Prestige Elite	P	17.1	7	256	¬ Q256
Prestige Elite	P	12	10	86	¬ Q86
Prestige Elite Bold	P	12	10	111	¬ Q111
Prestige Elite Italic	P	12	10	112	¬ Q112
CG Times	P	prop.	8	157	¬ Q157
CG Times	P	prop.	10	158	¬ Q158
CG Times Bold	P	prop.	10	159	¬ Q159
CG Times Italic	P	prop.	10	155	¬ Q155
Global Text Cartridge					
CG Century Schoolbook	P/L	prop.	8	16950	¬ Q16950
CG Century Schoolbook	P/L	prop.	10	16951	¬ Q16951
CG Century Schlbk Bold	P/L	prop.	10	16971	¬ Q16971
CG Century Schlbk Italic	P/L	prop.	10	17079	¬ Q17079
CG Triumvirate	P/L	prop.	10	33335	¬ Q33335
CG Triumvirate Bold	P/L	prop.	14	33357	¬ Q33357
Pretty Faces Cartridge					
Microstyle	P	prop.	18	5910	¬ Q5910
Microstyle Bold	P	prop.	36	5920	¬ Q5920
Hobo Medium	P	prop.	30	5930	¬ Q5930
Hobo Medium	P	prop.	14	5940	¬ Q5940
Thunderbird	P	prop.	54	5950	¬ Q5950
Signet Roundhand	P	prop.	18	5960	¬ Q5960
Signet Roundhand	P	prop.	14	5970	¬ Q5970
ITC Dingbats	P	prop.	36	5980	¬ Q5980
ITC Dingbats	P	prop.	18	5990	¬ Q5990

Table B-4. PPDS 4029 Mode Fonts.

Font	Pitch	Point Size	Typestyle Number	Font-Change Command
Resident Scalable Fonts				
Courier outline	prop.	6	416	¬ Q416
	prop.	8	426	¬ Q426
	prop.	10	436	¬ Q436
	prop.	12	446	¬ Q446
	prop.	14	456	¬ Q456
	prop.	18	466	¬ Q466
	prop.	24	476	¬ Q476
	prop.	20	486	¬ Q486
Courier bold outline	prop.	6	420	¬ Q420
	prop.	8	430	¬ Q430
	prop.	10	440	¬ Q440
	prop.	12	450	¬ Q450
	prop.	14	460	¬ Q460
	prop.	18	470	¬ Q470
	prop.	24	480	¬ Q480
	prop.	30	490	¬ Q490
Courier italic outline	prop.	6	424	¬ Q424
	prop.	8	434	¬ Q434
	prop.	10	444	¬ Q444
	prop.	12	454	¬ Q454
	prop.	14	464	¬ Q464
	prop.	18	474	¬ Q474
	prop.	24	484	¬ Q484
	prop.	30	494	¬ Q494
Courier bold italic outline	prop.	6	428	¬ Q428
	prop.	8	438	¬ Q438
	prop.	10	448	¬ Q448
	prop.	12	458	¬ Q458
	prop.	14	468	¬ Q468
	prop.	18	478	¬ Q478
	prop.	24	488	¬ Q488
	prop.	30	498	¬ Q498

Table B-4 (continued). PPDS 4029 Mode Fonts.

Font	Pitch	Point Size	Typestyle Number	Font-Change Command
Helvetica outline	prop.	6	2304	¬ Q2304
	prop.	8	2314	¬ Q2314
	prop.	10	2324	¬ Q2324
	prop.	12	2324	¬ Q2334
	prop.	14	2344	¬ Q2344
	prop.	18	2354	¬ Q2354
	prop.	24	2364	¬ Q2364
	prop.	30	2374	¬ Q2374
Helvetica bold outline	prop.	6	2305	¬ Q2305
	prop.	8	2315	¬ Q2315
	prop.	10	2325	¬ Q2325
	prop.	12	2335	¬ Q2335
	prop.	14	2345	¬ Q2345
	prop.	18	2355	¬ Q2355
	prop.	24	2365	¬ Q2365
	prop.	30	2375	¬ Q2375
Helvetica italic outline	prop.	6	2306	¬ Q2306
	prop.	8	2316	¬ Q2316
	prop.	10	2326	¬ Q2326
	prop.	12	2336	¬ Q2336
	prop.	14	2346	¬ Q2346
	prop.	18	2356	¬ Q2356
	prop.	24	2366	¬ Q2366
	prop.	30	2376	¬ Q2376
Helvetica bold italic outline	prop.	6	2307	¬ Q2307
	prop.	8	2317	¬ Q2317
	prop.	10	2327	¬ Q2327
	prop.	12	2337	¬ Q2337
	prop.	14	2347	¬ Q2347
	prop.	18	2357	¬ Q2357
	prop.	24	2367	¬ Q2367
	prop.	30	2377	¬ Q2377

Table B-4 (continued). PPDS 4029 Mode Fonts.

Font	Pitch	Point Size	Typestyle Number	Font-Change Command
Times New Roman outline	prop.	6	2308	¬ Q2308
	prop.	8	2318	¬ Q2318
	prop.	10	2328	¬ Q2328
	prop.	12	2338	¬ Q2338
	prop.	14	2348	¬ Q2348
	prop.	18	2358	¬ Q2358
	prop.	24	2368	¬ Q2368
	prop.	30	2378	¬ Q2378
Times New Roman bd outline	prop.	6	2309	¬ Q2309
	prop.	8	2319	¬ Q2319
	prop.	10	2329	¬ Q2329
	prop.	12	2339	¬ Q2339
	prop.	14	2349	¬ Q2349
	prop.	18	2359	¬ Q2359
	prop.	24	2369	¬ Q2369
	prop.	30	2379	¬ Q2379
Times New Roman it outline	prop.	6	2310	¬ Q2310
	prop.	8	2320	¬ Q2320
	prop.	10	2330	¬ Q2330
	prop.	12	2340	¬ Q2340
	prop.	14	2350	¬ Q2350
	prop.	18	2360	¬ Q2360
	prop.	24	2370	¬ Q2370
	prop.	30	2380	¬ Q2380
Times New Roman bd it outline	prop.	6	2311	¬ Q2311
	prop.	8	2321	¬ Q2321
	prop.	10	2331	¬ Q2331
	prop.	12	2341	¬ Q2341
	prop.	14	2351	¬ Q2351
	prop.	18	2361	¬ Q2361
	prop.	24	2371	¬ Q2371
	prop.	30	2381	¬ Q2381

Table B-4 (continued). PPDS 4029 Mode Fonts.

Font	Pitch	Point Size	Typestyle Number	Font-Change Command
HP Font Cartridge Fonts				
Universal Cartridge 1255800				
Prestige Elite	12	10	86*	¬ Q86
Prestige Elite italic	12	10	112	¬ Q112
Courier italic	10	12	18	¬ Q18
Presentor	10	14	25	¬ Q25
Letter Gothic	12	12	87*	¬ Q87
Letter Gothic italic	12	12	109	¬ Q109
Letter Gothic symbol	12	12	80*	¬ Q80
Times Roman	prop.	10	5687	¬ Q5687
Times Roman bold	prop.	10	5707	¬ Q5707
Times Roman italic	prop.	10	5815	¬ Q5815
Helvetica	prop.	10	34103	¬ Q34103
Helvetica bold	prop.	10	34123	¬ Q34123
Helvetica italic	prop.	10	34231	¬ Q34231
Letter Gothic symbol	12	12	88	¬ Q88
Italic Cartridge 1255801				
Courier italic	10	12	18	¬ Q18
Courier symbol	10	12	8	¬ Q8
Courier italic	12	10	92	¬ Q92
Courier	15	9	223*	¬ Q223
Boldface italic	prop.	12	155	¬ Q155
Courier symbol	10	12	13*	¬ Q13
Prestige Cartridge 1255802				
Prestige Pica	10	12	12*	¬ Q12
Prestige Elite	12	10	86*	¬ Q86
Prestige Elite bold	12	10	111	¬ Q111
Prestige Elite italic	12	10	112	¬ Q112
Prestige	17.1	8.5	256	¬ Q256
Prestige	prop.	12	164	¬ Q164
Prestige Elite symbol	12	10	89	¬ Q89
Letter Gothic Cartridge 1255803				
Letter Gothic	10	14	36	¬ Q36
Letter Gothic	12	12	87*	¬ Q87
Letter Gothic bold	12	12	110	¬ Q110
Letter Gothic italic	12	12	109	¬ Q109

Table B-4 (continued). PPDS 4029 Mode Fonts.

Font	Pitch	Point Size	Typestyle Number	Font-Change Command
Letter Gothic symbol	12	12	88	¬ Q88
Delegate Cartridge 1255804				
Delegate	10	12	2	¬ Q2
Adjutant	12	10	95	¬ Q95
Modern	prop.	12	158*	¬ Q158
Essay	prop.	12	160*	¬ Q160
Essay italic	prop.	12	162*	¬ Q162
Script/OCR Cartridge				
Script	12	10	84*	¬ Q84
Olde World	12	10	96	¬ Q96
Title	prop.	12	157	¬ Q157
APL	12	10	76	¬ Q76
OCR A	10	12	19	¬ Q19
OCR B	10	12	3	¬ Q3
APT/TN	12	10	77	¬ Q77
Orator Cartridge 1255806				
Orator bold	8.1	16	434	¬ Q434
Orator bold	6.5	18	435	¬ Q435
Orator	10	14	5*	¬ Q5
Compressed Cartridge 1255807				
Prestige	15	9	221	¬ Q221
Letter Gothic	15	9	222*	¬ Q222
Letter Gothic	17.1	8.5	255	¬ Q255
Letter Gothic	20	7.5	281	¬ Q281
Letter Gothic	25	6	285	¬ Q285
Light Italic	12	10	91*	¬ Q91
Press Roman Cartridge 1255808				
Press Roman	prop.	10	186	¬ Q186
Press Roman bold	prop.	10	187	¬ Q187
Press Roman italic	prop.	10	188	¬ Q188
Press Roman bold italic	prop.	10	189	¬ Q189
Press Roman symbol	12	10	185	¬ Q185
Foundry Cartridge 1255809				
Foundry	prop.	10	190	¬ Q190
Foundry bold	prop.	10	191	¬ Q191
Foundry italic	prop.	10	194	¬ Q194

Table B-4 (continued). PPDS 4029 Mode Fonts.

Font	Pitch	Point Size	Typestyle Number	Font-Change Command
Foundry bold italic	prop.	10	195	¬ Q195
Foundry symbol	12	10	192	¬ Q192
Testimonial Cartridge 1255820				
Testimonial	prop.	12	5943	¬ Q5943
Testimonial	prop.	14	5944	¬ Q5944
Testimonial	prop.	18	5945	¬ Q5945
Engravers' Old English Cartridge 1255821				
Engravers' Old English	prop.	12	37431	¬ Q37431
Engravers' Old English	prop.	14	37432	¬ Q37432
Engravers' Old English	prop.	18	37433	¬ Q37433
Times Roman Cartridge 1255822				
Times Roman	prop.	12	5688	¬ Q5688
Times Roman bold	prop.	14	5709	¬ Q5709
Times Roman bold	prop.	18	5710	¬ Q5710
Times Roman Cartridge 1255823				
Times Roman	prop.	6	5685	¬ Q5685
Times Roman	prop.	8	5686	¬ Q5686
Times Roman bold italic	prop.	10	5835	¬ Q5835
Times Roman	prop.	10	5687	¬ Q5687
Times Roman bold	prop.	10	5707	¬ Q5707
Times Roman italic	prop.	10	5815	¬ Q5815
Combo (Data Stream 1) Cartridge 1255824				
Prestige Elite	12	10	86*	¬ Q86
Helvetica	prop.	14	34105	¬ Q34105
Orator	10	14	5*	¬ Q5
OCR A	10	12	19	¬ Q19
OCR B	10	12	3	¬ Q3
Helvetica Cartridge 1255825				
Helvetica	prop.	12	34104	¬ Q34104
Helvetica bold	prop.	14	34125	¬ Q34125
Helvetica bold	prop.	18	34126	¬ Q34126
Helvetica Cartridge 1255826				
Helvetica	prop.	6	34101	¬ Q34101
Helvetica	prop.	8	34102	¬ Q34102
Helvetica bold italic	prop.	10	34251	¬ Q34251
Helvetica	prop.	10	34103	¬ Q34103

Table B-4 (continued). PPDS 4029 Mode Fonts.

Font	Pitch	Point Size	Typestyle Number	Font-Change Command
Helvetica bold	prop.	10	34123	¬ Q34123
Helvetica italic	prop.	10	34231	¬ Q34231
Cursive Cartridge 1255827				
Cursive	prop.	12	41783	¬ Q41783
Cursive	prop.	14	41803	¬ Q41803
Cursive	prop.	18	41804	¬ Q41804
Palatino Cartridge 1255828				
Palatino	prop.	12	6200	¬ Q6200
Palatino	prop.	14	6219	¬ Q6219
Palatino	prop.	18	6220	¬ Q6220
Palatino Cartridge 1255829				
Palatino	prop.	6	6197	¬ Q6197
Palatino	prop.	8	6198	¬ Q6198
Palatino	prop.	10	6199	¬ Q6199
Palatino bold	prop.	10	6218	¬ Q6218
Palatino italic	prop.	10	6327	¬ Q6327
Palatino bold italic	prop.	10	6347	¬ Q6347
Optima Cartridge 1255830				
Optima	prop.	12	33336	¬ Q33336
Optima bold	prop.	14	33356	¬ Q33356
Optima bold	prop.	18	33357	¬ Q33357
Optima Cartridge 1255831				
Optima	prop.	6	33333	¬ Q33333
Optima	prop.	8	33334	¬ Q33334
Optima	prop.	10	33335	¬ Q33335
Optima bold	prop.	10	33355	¬ Q33355
Optima italic	prop.	10	33463	¬ Q33463
Optima bold italic	prop.	10	33483	¬ Q33483
Century Schoolbook Cartridge 1255832				
Century Schoolbook	prop.	12	16952	¬ Q16952
Century Schoolbook bold	prop.	14	16972	¬ Q16972
Century Schoolbook bold	prop.	18	16973	¬ Q16973
Century Schoolbook Cartridge 1255833				
Century Schoolbook	prop.	6	16949	¬ Q16949
Century Schoolbook	prop.	8	16950	¬ Q16950
Century Schoolbook	prop.	10	16951	¬ Q16951

Table B-4 (continued). PPDS 4029 Mode Fonts.

Font	Pitch	Point Size	Typestyle Number	Font-Change Command
Century Schoolbook bold	prop.	10	16971	¬ Q16971
Century Schoolbook italic	prop.	10	17079	¬ Q17079
Century Schoolbook bold italic	prop.	10	17099	¬ Q17099
Goudy Old Style Cartridge 1255834				
Goudy Old Style	prop.	12	4920	¬ Q4920
Goudy Old Style bold	prop.	14	4940	¬ Q4940
Goudy Old Style bold	prop.	18	4941	¬ Q4941
Goudy Old Style Cartridge 1255835				
Goudy Old Style	prop.	6	4917	¬ Q4917
Goudy Old Style	prop.	8	4918	¬ Q4918
Goudy Old Style	prop.	10	4919	¬ Q4919
Goudy Old Style bold	prop.	10	4939	¬ Q4939
Goudy Old Style italic	prop.	10	5047	¬ Q5047
Goudy Old Style bold italic	prop.	10	5067	¬ Q5067
Baskerville Cartridge 1255836				
Baskerville	prop.	12	8504	¬ Q8504
Baskerville bold	prop.	14	8524	¬ Q8524
Baskerville bold	prop.	18	8525	¬ Q8525
Baskerville Cartridge 12558237				
Baskerville	prop.	6	8501	¬ Q8501
Baskerville	prop.	8	8502	¬ Q8502
Baskerville	prop.	10	8503	¬ Q8503
Baskerville bold	prop.	10	8523	¬ Q8523
Baskerville italic	prop.	10	8631	¬ Q8631
Baskerville bold italic	prop.	10	8651	¬ Q8651

Table B-4 (continued). PPDS 4029 Mode Fonts.

Font	Pitch	Point Size	Typestyle Number	Font-Change Command
Futura Cartridge 1255838				
Futura Book	prop.	12	33592	¬ Q33592
Futura Heavy	prop.	14	33602	¬ Q35602
Futura Heavy	prop.	18	33603	¬ Q33603
Futura Cartridge 1255839				
Futura Book	prop.	6	33589	¬ Q33589
Futura Book	prop.	8	33590	¬ Q33590
Futura Book	prop.	10	33591	¬ Q33591
Futura Heavy	prop.	10	33601	¬ Q33601
Futura Book italic	prop.	10	33719,	¬ Q33719
Futura Heavy italic	prop.	10	33729	¬ Q33729
Bar None Cartridge				
Code 3 of 9		4.6	21	¬ Q21
		8.1	22	¬ Q21
EAN/UPC		13 mil	23	¬ Q23
		10 mil	24	¬ Q24
USPS ZIP			26	¬ Q26
Line Draw			312	¬ Q312

Table B-5. HP 4029 Mode Fonts.

Font	Pitch	Point Size	Typestyle Number	Font-Change Command
Resident Fonts				
Courier	10	12	11*	¬ Q11
Courier bold	10	12	46	¬ Q46
Courier	15	8.5	223*	¬ Q223
Courier	17.1	8.5	254	¬ Q254
HP Font Cartridge Fonts				
Combo Cartridge 1255824				
OCR-A	10	12	19	¬ Q19
OCR-B	10	12	3	¬ Q3
Prestige Elite	12	10	86*	¬ Q86
Orator	10	14	5*	¬ Q5
Courier	12	10	85*	¬ Q85
Helvetica	prop.	14	34105,	¬ Q34105
Supports M Cartridge 1255841				
Prestige Elite	12	10	86*	¬ Q86
Prestige Elite bold	12	10	111	¬ Q111
Prestige Elite italic	12	10	112	¬ Q112
Supports R Cartridge 1255842				
Orator bold	6.5	18	435	¬ Q435
Orator bold	8.1	16	434	¬ Q434
Orator bold	10	14	38	¬ Q38
Letter Gothic	10	14	40	¬ Q40
Lines I	10	14	31	¬ Q31
Lines II	10	14	32	¬ Q32
Supports U/V Cartridge 1255843				
Swiss 721	prop.	6	34101	¬ Q34101
Swiss 721	prop.	8	34102	¬ Q34102
Swiss 721 bold	prop.	10	34123	¬ Q34123
Swiss 721 bold	prop.	12	34124	¬ Q34124
Swiss 721 bold	prop.	14	34125	¬ Q34125
Letter Gothic	15	9.5	230	¬ Q230

Table B-5 (continued). HP 4029 Mode Fonts.

Font	Pitch	Point Size	Typestyle Number	Font-Change Command
Supports Z Cartridge 1255844				
Press Roman	prop.	8	185	¬ Q185
Press Roman	prop.	10	186	¬ Q186
Press Roman bold	prop.	10	187	¬ Q187
Press Roman italic	prop.	10	188	¬ Q188
Press Roman	prop.	12	189	¬ Q189
Press Roman bold	prop.	12	190	¬ Q190
Press Roman italic	prop.	12	191	¬ Q191
Press Roman bold	prop.	14	192	¬ Q192
Letter Gothic	17.1	8.5	255	¬ Q255
Supports Z Cartridge 1255845				
Swiss 721	prop.	10	34103	¬ Q34103
Swiss 721 italic	prop.	10	34231	¬ Q34231
Swiss 721	prop.	12	34104	¬ Q34104
Swiss 721 italic	prop.	12	34232	¬ Q34232
Swiss 721	prop.	8	34102	¬ Q34102
Swiss 721 bold	prop.	10	34123	¬ Q34123
Swiss 721 bold	prop.	12	34124,	¬ Q34124
Swiss 721 bold	prop.	14	34125	¬ Q34125
Letter Gothic	17.1	8.5	255	¬ Q255
Supports Resident Cartridge 1255846				
Courier	10	12	11*	¬ Q11
Courier bold	10	12	46	¬ Q46
Courier italic	10	12	18	¬ Q18
Courier bold	12	10	108	¬ Q108
Courier italic	12	10	92	¬ Q92
Courier	16.7	8.5	252	¬ Q252
Courier	12	10	85*	¬ Q85

Table B-5 (continued). HP 4029 Mode Fonts.

Font	Pitch	Point Size	Typestyle Number	Font-Change Command
Supports N Cartridge 1255847				
Letter Gothic	12	12	87*	¬ Q87
Letter Gothic bold	12	12	110	¬ Q110
Letter Gothic italic	12	12	109	¬ Q109
Supports T Cartridge 1255848				
Swiss 721	prop.	6	34101	¬ Q34101
Swiss 721	prop.	8	34102	¬ Q34102
Swiss 721 bold	prop.	10	34123	¬ Q34123
Swiss 721 bold	prop.	12	34124	¬ Q34124
Swiss 721 bold	prop.	14	34125	¬ Q34125
Swiss 721 bold	prop.	8	34122	¬ Q34122
Tax Line Draw	10	12	30	¬ Q30
OCR-A	10	12	19	¬ Q19
Bar None Cartridge				
Code 3 of 9		4.6	21	¬ Q21
		8.1	22	¬ Q22
EAN/UPC		13 mil	23	¬ Q23
		10 mil	24	¬ Q24
USPS ZIP			26	¬ Q26
Letter Gothic (Roman 8)		10	36	¬ Q36
		12	88	¬ Q88
		15	225	¬ Q225
Presentation (Roman 8)		18	50	¬ Q50
Presentation (Legal)		18	51	¬ Q51
Line Draw			312	¬ Q312

Appendix C: Code Conversion Tables

For 8D, AD, BC and DA, either of the two characters may print, depending on printer type or emulation.

For other languages, refer to the IBM 5250 Function Reference Manual, SA21-9247-6.

Table C-1. EBCDIC Table (US National).

Hex	EBCDIC	Hex	EBCDIC	Hex	EBCDIC
40	space	56	î	6C	%
41	req space	57	ï	6D	_
42	â	58	ì	6E	>
43	ä	59	ß	6F	?
44	à	5A	!	70	ø
45	á	5B	$	71	É
46	ã	5C	*	72	Ê
47	å	5D	)	73	Ë
48	ç	5E	;	74	È
49	ñ	5F	¬	75	Í
4A	¢	60	-	76	Î
4B	.	61	/	77	Ï
4C	<	62	Â	78	Ì
4D	(	63	Ä	79	`
4E	+	64	À	7A	:
4F	|	65	Á	7B	#
50	&	66	Ã	7C	@
51	é	67	Å	7D	'
52	ê	68	Ç	7E	=
53	ë	69	Ñ	7F	"
54	è	6A	|	80	Ø
55	f	6B	,	81	a

Table C-1 (continued). EBCDIC Table (US National).

Hex	EBCDIC	Hex	EBCDIC	Hex	EBCDIC
82	b	9E	Æ	BA	[
83	c	9F	❑	BB	]
84	d	A0	µ	BC	≠
85	e	A1	~	BD	¨
86	f	A2	s	BE	´
87	g	A3	t	BF	_
88	h	A4	u	C0	{
89	i	A5	v	C1	A
8A	«	A6	w	C2	B
8B	»	A7	x	C3	C
8C	δ	A8	y	C4	D
8D	≤	A9	z	C5	E
8E	ρ	AA	¡	C6	F
8F	±	AB	¿	C7	G
90	°	AC	D	C8	H
91	j	AD	↑	C9	I
92	k	AE	*P*	CA	—
93	l	AF	®	CB	ô
94	m	B0	^	CC	ö
95	n	B1	£	CD	ò
96	o	B2	¥	CE	ó
97	p	B3	•	CF	õ
98	q	B4	ƒ	D0	}
99	r	B5	§	D1	J
9A	ª	B6	¶	D2	K
9B	º	B7	¼	D3	L
9C	æ	B8	½	D4	M
9D	,	B9	¾	D5	N

Table C-1 (continued). EBCDIC Table (US National).

Hex	EBCDIC	Hex	EBCDIC	Hex	EBCDIC
D6	O	E4	U	F2	2
D7	P	E5	V	F3	3
D8	Q	E6	W	F4	4
D9	R	E7	X	F5	5
DA	≥	E8	Y	F6	6
DB	û	E9	Z	F7	7
DC	ü	EA	^{2}	F8	8
DD	ù	EB	Ô	F9	9
DE	ú	EC	Ö	FA	^{3}
DF	ÿ	ED	Ò	FB	Û
E0	\	EE	Ó	FC	Ü
E1	num space	EF	Õ	FD	Ù
E2	S	F0	0	FE	Ú
E3	T	F1	1	FF	

Table C-2. US ASCII Table.

Decimal	Hex	ASCII	Decimal	Hex	ASCII
0	00	(NUL)	28	1C	(FS)
1	01	(SOH)	29	1D	(GS)
2	02	(STX)	30	1E	(RS)
3	03	(ETX)	31	1F	(US)
4	04	(EOT)	32	20	(SP)
5	05	(ENQ)	33	21	!
6	06	(ACK)	34	22	"
7	07	(BEL)	35	23	#
8	08	(BS)	36	24	$
9	09	(HT)	37	25	%
10	0A	(LF)	38	26	&
11	0B	(VT)	39	27	‘
12	0C	(FF)	40	28	(
13	0D	(CR)	41	29	)
14	0E	(SO)	42	2A	*
15	0F	(SI)	43	2B	+
16	10	(DLE)	44	2C	,
17	11	(DC1)	45	2D	-
18	12	(DC2)	46	2E	.
19	13	(DC3)	47	2F	/
20	14	(DC4)	48	30	0
21	15	(NAK)	49	31	1
22	16	(SYN)	50	32	2
23	17	(ETB)	51	33	3
24	18	(CAN)	52	34	4
25	19	(EM)	53	35	5
26	1A	(SUB)	54	36	6
27	1B	(ESC)	55	37	7

Table C-2 (continued). US ASCII Table.

Decimal	Hex	ASCII	Decimal	Hex	ASCII
56	38	8	84	54	T
57	39	9	85	55	U
58	3A	:	86	56	V
59	3B	;	87	57	W
60	3C	<	88	58	X
61	3D	=	89	59	Y
62	3E	>	90	5A	Z
63	3F	?	91	5B	[
64	40	@	92	5C	\
65	41	A	93	5D	]
66	42	B	94	5E	^
67	43	C	95	5F	_
68	44	D	96	60	'
69	45	E	97	61	a
70	46	F	98	62	b
71	47	G	99	63	c
72	48	H	100	64	d
73	49	I	101	65	e
74	4A	J	102	66	f
75	4B	K	103	67	g
76	4C	L	104	68	h
77	4D	M	105	69	i
78	4E	N	106	6A	j
79	4F	O	107	6B	k
80	50	P	108	6C	l
81	51	Q	109	6D	m
82	52	R	110	6E	n
83	53	S	111	6F	o

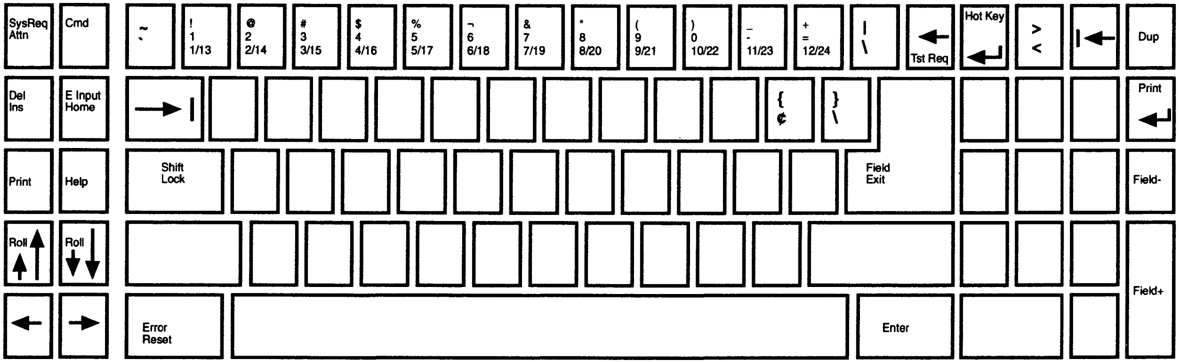
Table C-2 (continued). US ASCII Table.

Decimal	Hex	ASCII	Decimal	Hex	ASCII
112	70	p	132	84	N/A
113	71	q	133	85	N/A
114	72	r	134	86	N/A
115	73	s	135	87	N/A
116	74	t	136	88	N/A
117	75	u	137	89	N/A
118	76	v	138	8A	N/A
119	77	w	139	8B	N/A
120	78	x	140	8C	N/A
121	79	y	141	8D	N/A
122	7A	z	142	8E	N/A
123	7B		143	8F	N/A
124	7C	{	144	90	N/A
125	7D	|	145	91	N/A
126	7E	}	146	92	N/A
127	7F	~	147	93	N/A
128	80	(DEL)	148	94	N/A
129	81	N/A	148	95	N/A
130	82	N/A	150	96	N/A
131	83	N/A	151	97	N/A

Appendix D: Keyboard Templates

The following table gives a general definition for each 5250 (host) key. Keyboard templates have been included.

5250 Keys	Functions of the Keys
Cmd	This key disregards the normal function of the repeating key and performs the function assigned in the host's program.
Del	Deletes the character where the cursor is located.
Dup	Requests that the host program duplicate the data from the same field in the previous record.
Erase Input	Erases data entered in all input fields. The cursor will move to the top left corner of the screen.
Error Reset	Unlocks keyboard after it is locked because of error condition. The key will also reset the help, insert, command, and system request modes.
Field +	Can be used as a field exit key in all fields.
Field -	Operates much like the Field + key, but in signed numeric and numeric fields only.
Field Exit	Used to exit fields that are specified in a program as field-exit required, or as right justified.
Help	Describes the current error condition. The error reset key will reset the help message and error condition to restore the screen and unlock the keyboard.

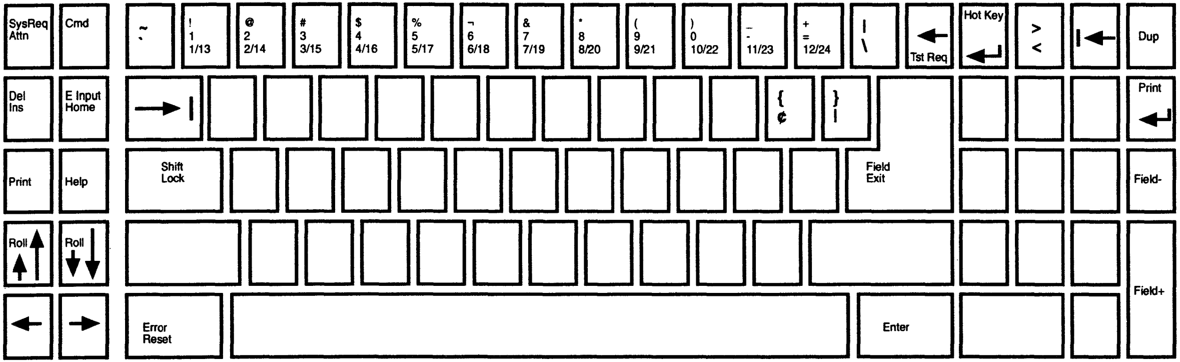


Command Summary:

Configuration Program:	TWCONFIG
Start Emulation:	TWATTACH
End Emulation:	
at 3X Main Menu	OFF<ENTER>
at 3X Sign-On Screen	<ALT><CTRL><DEL>
Hot Key to DOS or Printer Control Screen:	<ALT><ESC>

Status Line:

rr-cc	Cursor location (row-column)
SA	System Available
MW	Message Waiting
KS	Keyboard Shift
IM	Insert Mode
II	Input Inhibited
KB	Keyboard Buffering
Sn	n=active logical unit
An	n=active host address

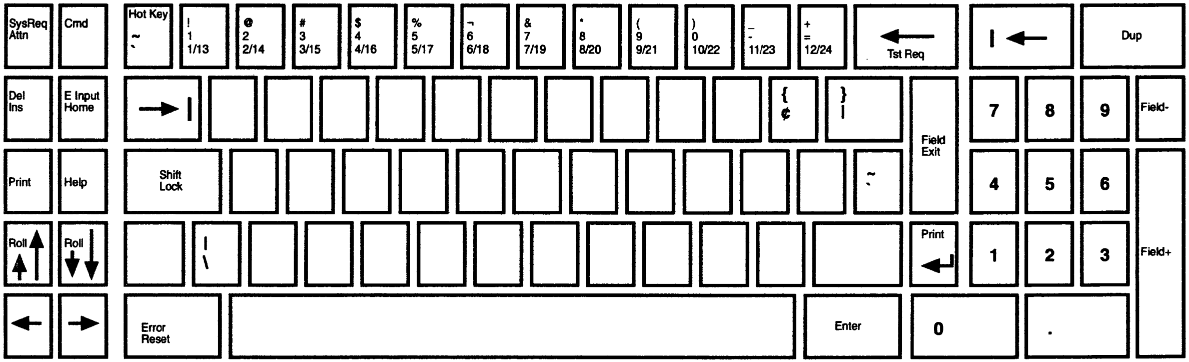


Command Summary:

Configuration Program:	TWCONFIG
Start Emulation:	TWATTACH
End Emulation:	
at 3X Main Menu	OFF<ENTER>
at 3X Sign-On Screen	<ALT><CTRL><DEL>
Hot Key to DOS or Printer Control Screen:	<ALT><ESC>

Status Line:

rr-cc	Cursor location (row-column)
SA	System Available
MW	Message Waiting
KS	Keyboard Shift
IM	Insert Mode
II	Input Inhibited
KB	Keyboard Buffering
Sn	n=active logical unit
An	n=active host address



Command Summary:

Configuration Program:	TWCONFIG
Start Emulation:	TWATTACH
End Emulation:	
at 3X Main Menu	OFF<ENTER>
at 3X Sign-On Screen	<ALT><CTRL><DEL>
Hot Key to DOS or Printer Control Screen:	<ALT><ESC>

Status Line:

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SA	System Available
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KS	Keyboard Shift
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KB	Keyboard Buffering
Sn	n=active logical unit
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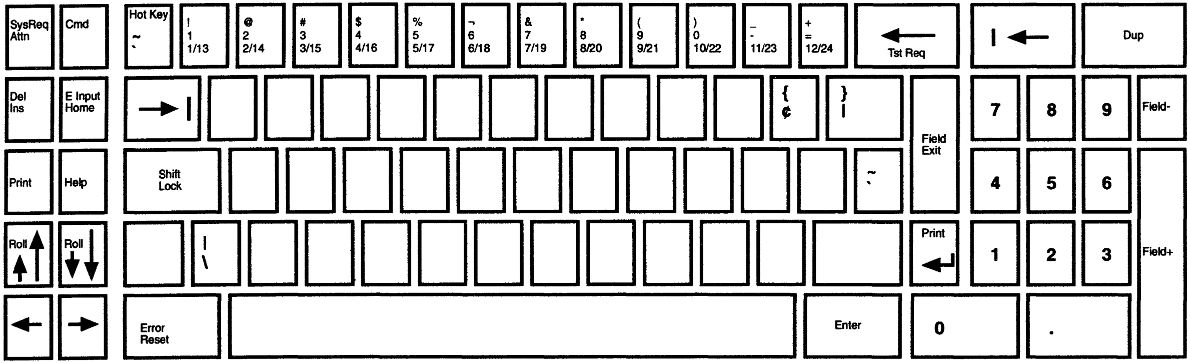

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End Emulation:	
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at 3X Sign-On Screen	<ALT><CTRL><DEL>
Hot Key to DOS or Printer Control Screen:	<ALT><ESC>

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Sn	n=active logical unit
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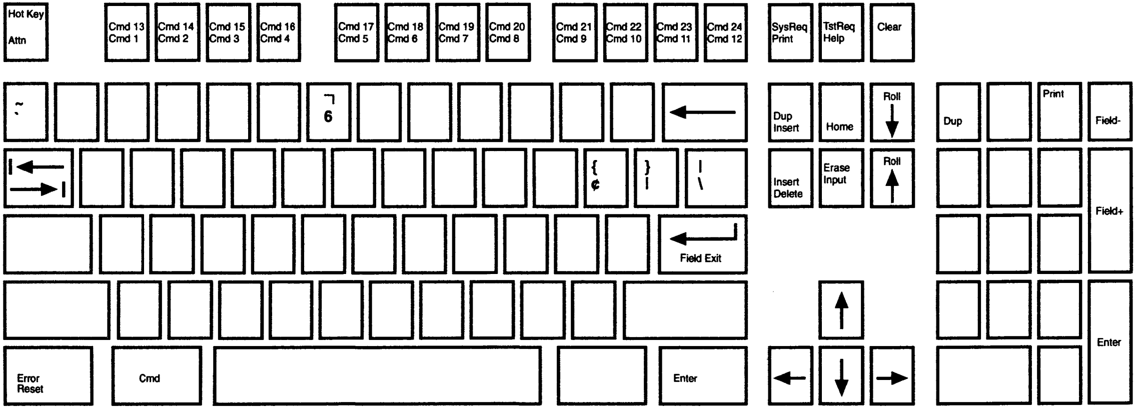

Command Summary:

Configuration Program:	TWCONFIG
Start Emulation:	TWATTACH
End Emulation:	
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at 3X Sign-On Screen	<ALT><CTRL><DEL>
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Sn	n=active logical unit
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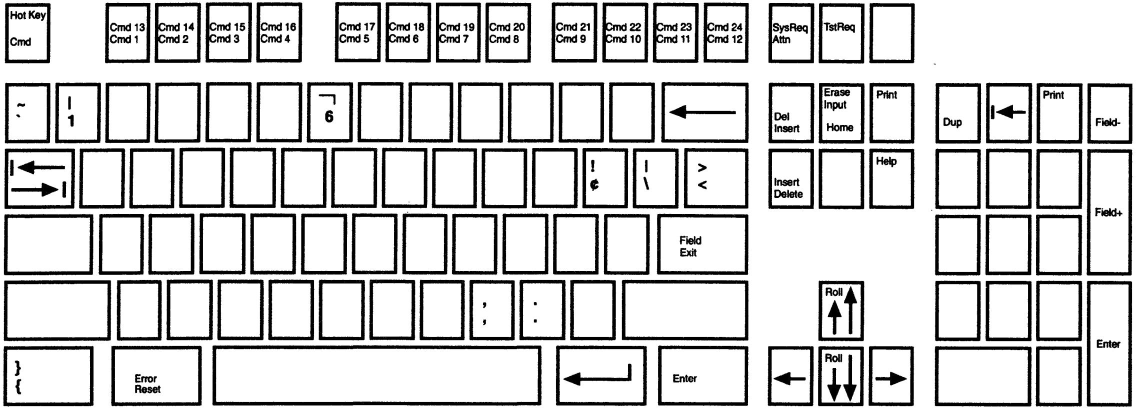

Command Summary:

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Start Emulation:	TWATTACH
End Emulation:	
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at 3X Sign-On Screen	<ALT><CTRL><DEL>
Hot Key to DOS or Printer Control Screen:	<ALT><ESC>

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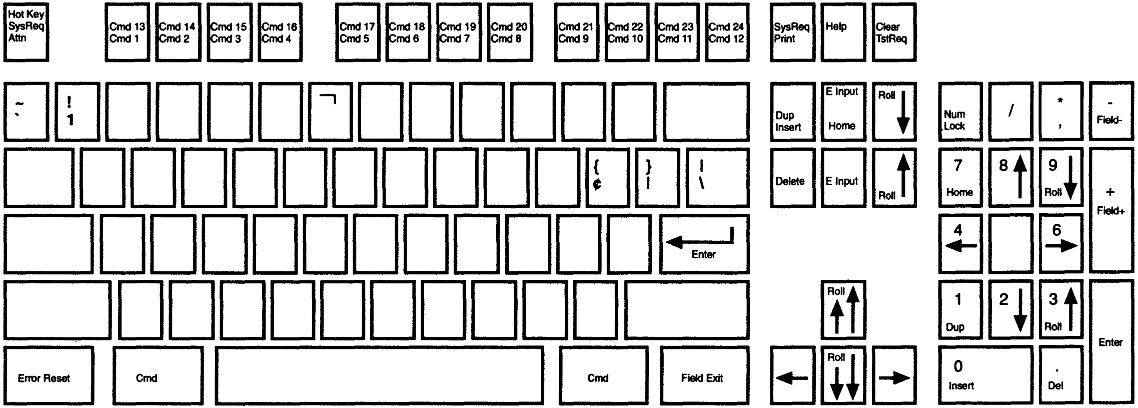
Sn	n=active logical unit
An	n=active host address



Command Summary:	
Configuration Program:	TWCONFIG
Start Emulation:	TWATTACH
End Emulation:	
at 3X Main Menu	OFF<ENTER>
at 3X Sign-On Screen	<ALT><CTRL><DEL>
Hot Key to DOS or Printer Control Screen:	<ALT><ESC>

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Sn	n=active logical unit
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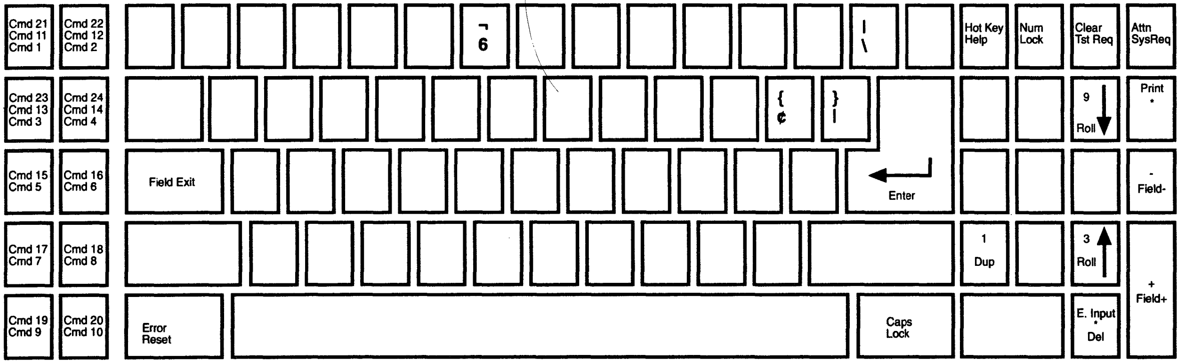

Command Summary:	
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Start Emulation:	TWATTACH
End Emulation:	
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at 3X Sign-On Screen	<ALT><CTRL><DEL>
Hot Key to DOS or Printer Control Screen:	<ALT><ESC>

Status Line:	
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Sn	n=active logical unit
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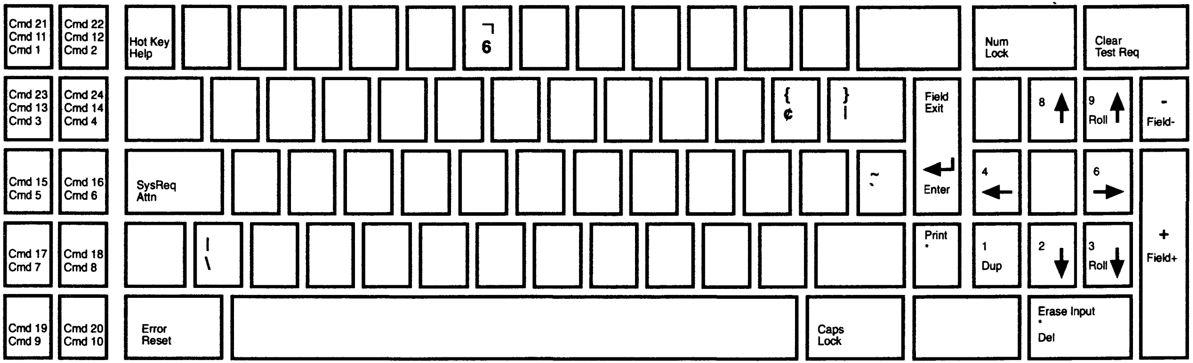

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Start Emulation:	TWATTACH
End Emulation:	
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at 3X Sign-On Screen	<ALT><CTRL><DEL>
Hot Key to DOS or Printer Control Screen:	<ALT><ESC>

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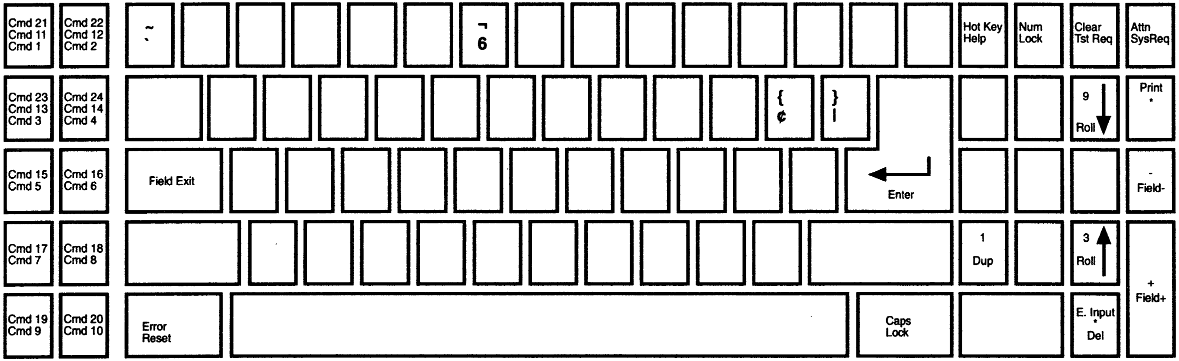

Command Summary:

Configuration Program:	TWCONFIG
Start Emulation:	TWATTACH
End Emulation:	
at 3X Main Menu	OFF<ENTER>
at 3X Sign-On Screen	<ALT><CTRL><DEL>
Hot Key to DOS or Printer Control Screen:	<ALT><ESC>

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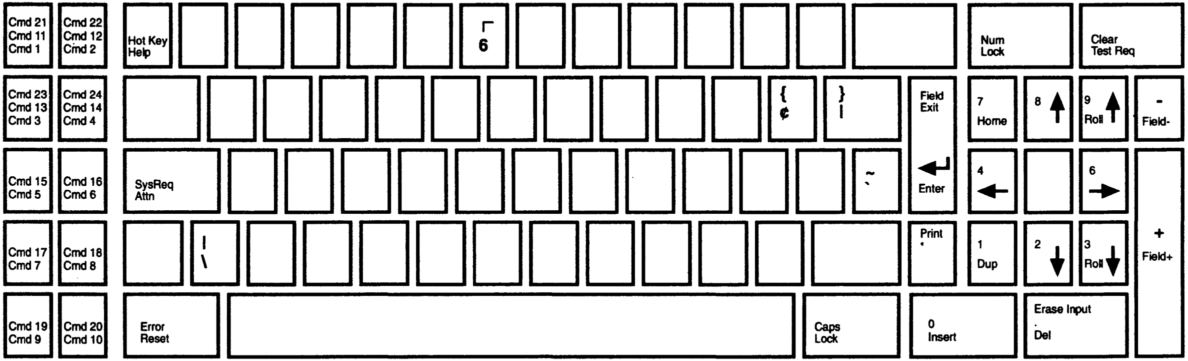

Command Summary:

Configuration Program:	TWCONFIG
Start Emulation:	TWATTACH
End Emulation:	
at 3X Main Menu	OFF<ENTER>
at 3X Sign-On Screen	<ALT><CTRL><DEL>
Hot Key to DOS or Printer Control Screen:	<ALT><ESC>

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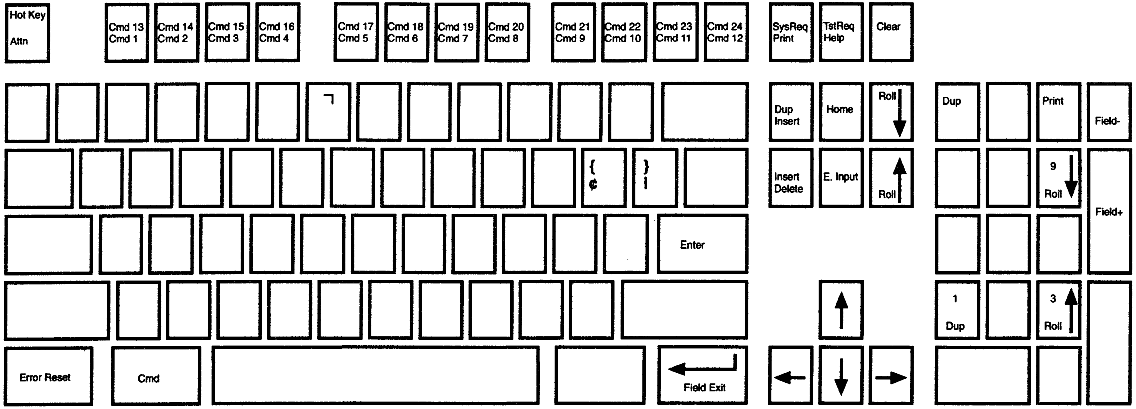

Command Summary:

Configuration Program:	TWCONFIG
Start Emulation:	TWATTACH
End Emulation:	
at 3X Main Menu	OFF<ENTER>
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Appendix E. 5250 EconoCard Enhancements

These enhancements to the 5250 EconoCard are available in Version 3.5.

INSTALLATION

To install the software, insert the diskette into a floppy drive, change to the desired drive (A: or B:), then type INSTALL. Follow the instructions on the screen.

EMRESET.EXE

EMRESET is a utility that, when executed, will set the 5250 EconoCard to its initial power-on state. Execute it from a DOS prompt when you need to clear the 5250 EconoCard from its memory block.

3812 Printer Driver

When the software is installed, the new printer driver will be used if a 3812 HP printer is selected.

Client Access/400 Windows

To install the software to work with Client Access/400 for Windows, insert the diskette into a floppy drive. Change to the desired drive (A: or B:) and change to the CA directory on the floppy (CD\CA). Type INSTALL and follow the instructions on the screen.

After the installation is complete and Client Access/400 for Windows is installed, go to the TWXDRV directory on the hard drive and execute FIXIBMCA.BAT. This will install an IBM fix that will patch the IBM virtual drives to work with any third-party card.

Personal Communication for Windows

To enable the software to work with Personal Communications AS/400 for Windows, insert the diskette into a floppy drive. Change to the desired drive (A: or B:) and change to the CA directory on the floppy (CD\CA). Type INSTALL and follow the instructions on the screen.

After the installation is complete and Client Access/400 for Windows is installed, go to the TWXDRV directory on the hard drive and execute FIXIBMPC.BAT. This will install an IBM fix that will patch the IBM virtual drivers to work with third-party cards.

NOTES

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The Source for Connectivity®

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